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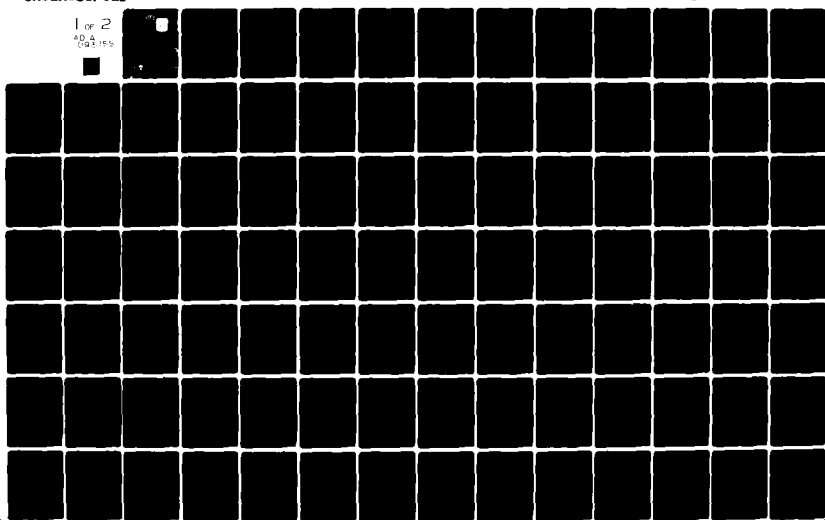
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DOES NATO NEED A NEW CONVENTIONAL OPERATIONAL STRATEGY?

by

Lieutenant Colonel Michael J. Morin

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USAWC MILITARY STUDIES PROGRAM PAPER

DOES NATO NEED A NEW CONVENTIONAL OPERATIONAL STRATEGY?

INDIVIDUAL STUDY PROJECT

by

Lieutenant Colonel Michael J. Morin
Infantry

US Army War College
Carlisle Barracks, Pennsylvania 17013
29 May 1980

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PREFACE

This individual study project was undertaken under the aegis of the US Army War College's Department of Military Strategy; Planning, and Operations. The scope and general methodology was designed by the author and approved by his faculty monitor, COL Ronald A. Roberge, Chairman of the department. The research paper is designed to show that there is a sounder way to conventionally defend the FRG considering the current state of preparedness of NATO forces, the current force ratios between the WARSAW Pact, the current logistics posture and the current mobilization capability of all member NATO nations. This study will contribute further to a rather large body of studies, articles, books and other documents on this subject. The particular contribution is the proposal of a new operational strategy for the conventional defense of NATO's frontier.

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CHAPTER I

INTRODUCTION

This introduction is designed to highlight the background of NATO's defensive alliance, the development of the conventional defense portion of the TRIAD, the Strategy of Flexible Response, a statement of the problem associated with the current defensive concept and the major assumptions underlying the basic argument of the paper. First, a brief look at the establishment of a conventional defense of NATO's frontier in the FRG.

BACKGROUND

The North Atlantic Treaty Organization (NATO) was created on 4 April 1949 when the Treaty was signed in Washington, DC, by thirteen European countries, the US and Canada. The alliance was established for the collective defense of all members as defined in Article 51 of the UN Charter. The primary purpose of the alliance is to maintain the security of member nations by deterring aggression or to restore the territorial integrity of the NATO area. This purpose requires the maintenance of sufficient NATO forces to preserve a stable balance of military strength with the WARSAW Pact. This NATO force is a TRIAD of conventional, theater nuclear and strategic nuclear forces; all linked together such that aggression can be met with an appropriate response in kind. However, over the years the nuclear portions of the TRIAD received more emphasis than the conventional forces. An integrated military structure controls all of NATO's forces. In 1954, France pulled its forces out of this integrated command, but not out of the alliance. This pullout further weakened the conventional posture.

The military task of NATO in peacetime is to plan for the combined/joint defense of NATO, to set up the necessary infrastructure and to arrange for combined/joint training. This military preparedness is aimed at preventing war with the WARSAW Pact. Since 1967, the second front of effort has been through detente to ease terrains between the opposing alliances. Detente includes MBFR and SALT negotiations and a considerable amount of East-West trade. NATO conducts an annual Defense Review to see how each nation is contributing to the Long Term Defense Program.¹

Steve Canby reminds us that the conventional part of the TRIAD was not always viewed as the weakest link. The Brussels Treaty of 1948 accepted the need for a strong conventional defense and it proposed 80 to 85 divisions for the central front. Later, at the Lisbon Conference in 1952, NATO members set their goal for divisions at 96, of which 25 to 30 would be active and the rest reserve. As the US introduced tactical nuclear weapons and force modernization for manpower an erosion of these force objectives took place. By January 1961, NATO's projected force objective was reduced to 28 1/3 divisions.² The US strategic and tactical nuclear monopoly offered NATO a military power without undue cash or burdens. For almost twenty years, NATO followed a strategy based on this nuclear superiority and smaller numbers of active divisions; it became known as the "trip-wire" defense.

The Soviet Union's attainment of strategic nuclear parity ended this favorable situation for NATO. Yet, the Europeans remain reluctant to add much strength to their conventional forces. Steve Canby points out that the Europeans still remain adherents of the trip-wire strategy from a slightly stouter nature. Conventional forces do not have to have a true warfighting capability. They are to prevent excursions by the WARSAW Pact or to test intentions. Any serious aggression will be met with a

nuclear response.³ This view is different than the United States' who wants a stronger conventional defense that doesn't rapidly escalate, particularly to first use of nuclear weapons. The disparity in conventional force ratios between the WARSAW Pact and NATO is the main problem. Western Europeans fear that conventional buildups will increase peacetime costs and weaken deterrence. The US thinks added conventional power will strengthen this TRIAD. This analysis will propose a new conventional operational strategy, which offers a reasonable change for successful defense, while this military gap debate goes on.

This military gap argument is not new. Back in 1964, Malcolm Hoag argued for a stronger conventional defense. He argued that without stronger conventional defenses NATO nations, fearing self-devastating nuclear exchanges, might be too willing to make concessions to the Soviets at the first sign of major aggression.⁴ He further stated the Europeans chose to add quality to existing units, enhance mobility and strengthen conventional firepower rather than add more divisions. The problem of how to guard the whole line of the Iron Curtain with such limited numbers of divisions was also discussed. Various alternatives from substituting militia forces for divisions (to free them for reserve and counterattack roles) to use of fortified strong points to the creation of reserves in depth were proposed.⁵ However, SHAPE showed little interest in such improvements due to the prevailing defensive concept as articulated by General Lemmitzer:

It has always been an aim of the alliance to defend physically the territory of NATO Europe as far forward as possible, but realization of this aim has been conditioned by the forces actually available to achieve it. For example, in the early days of NATO the best we could do in Central Europe was to man a defense based upon river obstacles deep in our own territory. With the strengthening of our forces in recent years, the

defenses have steadily moved forward, as, indeed, they should . . . the need, however, is not only for increased numbers. To fight an effective mobile defense requires greater tactical mobility, more armor, more conventional firepower and better logistical support than is found at present . . . and some restationing is needed.⁶

It is clear from the beginning of NATO that forward defense was an important goal but how far forward was dependent upon the forces available. As better force ratios were achieved in the 1960's the defenses were moved farther to the East but the defensive concept was to be mobile defense. Since there were little substantial force ratio improvements in the 1970's it is not clear why the defensive forces are now occupying the border areas. It is even less clear why the concept of mobile defense was exchanged for the more classic linear or "area" defensive concept now in vogue. One might term the current border dispositions as the "thin blue line." Nevertheless, strategic nuclear parity brought with it the Strategy of Flexible Response based on the Forward Defense principle.

STRATEGY OF FLEXIBLE RESPONSE

The current NATO strategy of Flexible Response (mc14/3) was formally adopted in December 1967, right after the French pulled out of the integrated NATO command. Several years of debate occurred after the Soviets achieved nuclear parity over what the components of the new strategy should be. The French pulled out essentially because they perceived the new strategy to sever the linkage between the US strategic nuclear forces and NATO's conventional defense.⁷

The principle aim of Flexible Response is to avoid war through deterrence. The new strategy established the NATO TRIAD which links conventional, theater and strategic nuclear weapons together, so that a wide range of responses

are available to oppose the WARSAW Pact with. The risk inherent in his attack must be incalculable to the Soviets. Soviet expectations of success must be grossly disproportionate to his casualties and losses. A West German White Paper on Defense says they are not interested in creating a European nuclear force, they need the protection of the United States' nuclear forces, its sea power and its conventional forces for an integrated forward defense to work. The five American divisions are an important element of forward defense and insure an attack on US forces right from the start. Theater nuclear forces (TNF) allow a response of deliberate escalation and are closely interlinked with the strategic long-range nuclear force.⁸ Writers often refer to this linkage between US conventional and TNF forces as the "American hostage force" which will bring "automatic" escalation. One principle purpose of this paper will be to define an operational concept to make US forces more than mere hostages.

The FRG White Paper goes on to say that an essential element of NATO's current strategy is the principle of forward defense. Forward defense is defined as a coherent defense conducted close to the intra-German border with the aim of losing as little ground as possible and confining damage to a minimum. This includes the recapture of lost territory. For the FRG there can be no alternative to the forward defense. The FRG's geostrategic position, her population density near the border and the structure of her economy makes any loss of territory unacceptable.⁹

General Franz-Joseph Schulze, former commander of CENTAG, says that the Central Region shares a common border of almost 1500 kilometers with the WARSAW Pact and concomitantly suffers from a lack of depth in its defense, but concludes:

We simply cannot afford to pursue a defensive strategy excessively flexible in the sense of trading ground--and population--in order to gain time, or to preserve our forces and rely on massive counterattacks. Forward Defense, on the other hand does not mean static defense The success of our forward defense will depend on our ability to bring all available firepower to bear, from the very outset of hostilities, in a well-coordinated truly 'combined land/air battle.'

He adds further that there is no alternative to the strategic concept of adequate, flexible response and controlled, graduated escalation. He ends by stating, "We do not need a new NATO strategy, but we do need the resources to implement the existing strategy."¹⁰ The key question is what will happen after the "first battle"?

General Schulze may well be right about the strategy but if there are insufficient resources to implement it, and I assume here he is mainly addressing the conventional deficiencies, this admittance alone places the conventional forward defense in jeopardy and means an automatic nuclear escalation. This paper will also address the essential deficiencies of the forward defense as one of the main reasons for the need of a new conventional operational strategy. There are other significant problems with the flexible response strategy.

Steve Canby presented a convincing argument in 1973 that too much stress on nuclear weapons would weaken the conventional defenses. He claimed that NATO military planning is shaped by outdated World War II concepts which has ruled out the possibility of building a strong conventional defense. The NATO conventional forces have always been asymmetrical in power to the WARSAW Pact forces. The Soviets have long enjoyed conventional superiority and now, gaining both tactical and strategic nuclear parity, have clearly disturbed the force equilibrium. He emphasizes that if NATO is to gain a viable military balance, it must build up its conventional forces. NATO's current conventional posture is high-risk and more dangerous because of

nuclear parity.¹¹ If one compares NATO and WARSAW Pact improvements to their respective conventional forces since 1973, one concludes that NATO has not followed Canby's advise, but perhaps the Soviets have.

Steve Canby concludes that the strategy of Flexible Response has four main problems as a result of weak conventional forces:

- 1) Providing stronger conventional forces is very costly.
- 2) The conventional phase of any future European war because of current asymmetries will induce instability and early escalation of nuclear weapons.
- 3) Our European allies are dubious about the deterrent value of such a weak conventional posture.
- 4) The Flexible Response strategy without an adequate conventional basis is a dangerous strategy.¹²

If the Soviets have structured their conventional forces to overrun the FRG quickly in a short war, they could be invited to do so by NATO's current strategy which might not allow sufficient time for thoughtful consideration of nuclear employments. This situation would result in a weakened negotiation position which could fragment the alliance under extreme stress. Clearly, without sufficient conventional forces to induce restraint on the Soviets there is no cohesive linkage to the nuclear escalation options. Graduated response cannot occur if the conventional forces are being mauled and about to be overrun or penetrated. There is little "flexibility" in this kind of Flexible Response.

With the conventional forces deployed close to the intra-German border, another dilemma occurs. The resultant disposition of conventional forces is a "thin blue" line of "outnumbered" forces ratio-wise, which allows the Soviets to concentrate sufficient forces at their own places of choosing.

These concentrations offer highly probable penetrations against no defense in depth capability. Lateral friendly movements cannot occur rapidly enough due to linear dispositions and cross-compartmented terrain limitations and TNF cannot be employed on German territory without extensive damage to population. So, in addition to insufficient sizing of NATO forces, pushing these forces to the border means all forces will probably be decisively engaged and penetrated.

Thus, there seems to be a critical need to not only strengthen NATO's conventional forces but to reanalyze how NATO intends to employ its forces in battle. The use of NATO's conventional forces may be more important than their relative strengths, particularly until sufficient force-ratios with the WARSAW Pact can be obtained.

FOUR DIMENSIONS OF STRATEGY

When analyzing the dimensions of a particular strategy one must be careful of what strategy is and how one should look at it. Michael Howard in his article, "The Forgotten Dimensions of Strategy," reminds us that Clausewitz's definition of strategy was deliberately simple: "the use of engagements for the object of the war." Thus, strategy concerns the deployment and use of armed forces in battle to achieve a given political objective.¹³

As already noted, NATO's political objective is to defend the territory of the FRG so that no territory is lost and to do this with minimal damage. The strategy selected to do this is Flexible Response, based on the principle of Forward Defense for the conventional forces. However, applying Clausewitz's definition of strategy, can the conventional forces engage

the enemy and achieve the political objectives? An answer to this question will be given at the end of Chapters II and III, assessment of

the WARSAW Pact and analysis of Forward Defense, respectively. Any detailed analysis of the risks of escalation to TNF or strategic nuclear warfare will not be presented in this paper as the purpose of the paper is to present a way to use the conventional forces so as to avoid escalation. Escalation to nuclear war will not avoid minimal damage to the FRG.

Michael Howard presents a convincing argument that the soundness of any strategy must be analyzed from four dimensions: the operational, the logistical, the social and the technological. These four dimensions will be used in Chapter III to analyze the current operational concept of the Forward Defense. Howard points out by the beginning of this century war was conducted in these four dimensions. Some wars have emphasized one dimension more so than the others, but all wars have involved all four dimensions. No successful strategy could be formulated that did not account of them all despite the possible domination of one or another.¹⁴

Michael Howard goes on to point out the belief that technology has somehow eliminated the need for operational effectiveness is no more valid in the nuclear age than it was in the Second World War. He states the conventional forces in NATO are considered as an expendable element in a complex mechanism for enhancing the credibility of nuclear response. Indeed, attempts to increase their operational effectiveness are still sometimes opposed on the grounds that to do so would be to reduce the credibility of nuclear retaliation. The crux of the matter falls on the people of the society:

Peoples who are not prepared to make the effort necessary for operational defense are even less likely to support a decision to initiate a nuclear exchange from which they themselves suffer almost inconceivable destruction, even if that decision is taken at the lowest level possible of nuclear escalation. And if such a decision were taken

over their heads, they would be unlikely to remain sufficiently resolute and united to continue to function as a cohesive political and military entity in the aftermath. The maintenance of adequate armed forces in peacetime, and the will to deploy and support them operationally in war, is in fact a symbol of that social unity and political resolve which is as essential an element in nuclear deterrence as any invulnerable second-strike capability.¹⁵

These are powerful words that blend the several dimensions of strategy Howard advocates, and points out the paradox of the Flexible Response strategy.

NATO's first use of nuclear weapons in Western Europe or Eastern Europe will invite retaliation against military targets such as units, ports, airfields, bridges, railroad yards and supply points for which NATO has no preparations at all. Even the new nuclear deployments to Europe do not solve the operational effectiveness problem so long as the Russians are in a conventional position to secure an operational victory without recourse to nuclear weapons at all. Howard points out that deterrence works both ways. He concludes his thoughts have valid implications for the defense of Western Europe and says:

We appear to be depending on the technological dimension of strategy to the detriment of its operational requirements, while we ignore its societal implications altogether-- something which our potential adversaries, very wisely, show no indication of doing. But the prospect of nuclear war is so appalling that we no less than our adversaries are likely, if war comes, to rely on "conventional" operational skills and the logistical capacity to support them for as long as possible, no less than we have in the past.¹⁶

We must insure that the Russians are not in a conventional position to achieve an operational victory. This will take not only the improvement of the size and strength of our conventional forces but their proper employment in battle as well.

STATEMENT OF THE PROBLEM

Steve Canby says NATO's military deficiency derives from its cordon-like forward defense, its lack of operational reserves and its tactical air force designed for offensive use. NATO must rethink its ground force depositions and use of tactical air power so they are more complementary. He concludes that the NATO approach to war is too firepower oriented and not enough maneuver oriented.¹⁷

Brigadier General (now Major General) J. C. Faith agrees in views he expressed at a seminar held in 1975 at the Royal United Services Institute for Defense Studies:

. . . doctrine and common sense tell us that we should fight a mobile defense, taking advantage of our mobility, our communications, our management of fire power and mental flexibility. . . . I think the requirements which we now perceive to fight the enemy as far forward as possible limit to a great extent our capability to play games with him, to allow him to come in and then cut him up with counterattacks.¹⁸

Ori Even-Tov carries this point further when he says that a balance between a flexible defense capability and a counterattack capability is still the only way to insure an adequate defense and deterrence. The basic laws of strategy and tactical doctrine have not changed with the advent of new weapons technology. A flexible defense enables one to sustain a surprise attack, exchanging ground and losses for time and heavy losses to the attacker. He ends by calling for the proper prioritization of the defense.¹⁹

General William E. DePuy reiterates this quandry when he concludes:

The ability to defend NATO requires a military force that can move on the battlefield. . . . If there was ever an army that needed an alternative to the long, thin line with its high casualties and dubious prospects

it is the weapons-intensive, manpower starved, all-volunteer army of the 1980s.²⁰

Can an operational strategy be designed for the conventional defense of NATO that is not a thin blue line, that is flexible in its approach, that does use mobility and has a counterattack capability that is consistent with doctrine, and, above all, still achieves NATO's political objectives?

The purpose of this paper is to determine if there is a more effective conventional operational strategy for implementing NATO's strategic principle of the Forward Defense. After assessing the capability of the WARSAW Pact to initiate a conventional attack and then taking a critical look at the current forward defense, a new operational concept will be proposed. The paper will conclude by placing this new strategy in the proper context of the evaluation of modern warfare and then end with some conclusions and recommendations.

MAJOR ASSUMPTIONS

The major assumptions of this paper are at Appendix 1. These assumptions narrow the scope of Flexible Response down to the conventional defensive portion of the TRIAD and define the framework into which the new operational strategy fits.

CHAPTER I

FOOTNOTES

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CHAPTER II

ASSESSMENT OF THE WARSAW PACT

The shape and conduct of a future war with the WARSAW Pact in Central Europe are very difficult to determine and second guessers are more often than not proven wrong. However, the prudent war planner must be prepared to adapt quickly to any foreseeable situation. Obviously, NATO must be prepared to take proper account of the worst plausible conventional threat. This chapter will examine the doctrine and tactics the Pact is most likely to use, their relative force ratios against NATO forces and the timing of deploying these forces and a plausible scenario of worst case.

In 1959, Raymond Garthoff warned:

We cannot rest assured that the Soviet leaders will not some day launch a massive surprise attack upon us in their effort to gain mastery of the world. If the United States were ever to let its whole military strength so decline that the Soviets believed they could win at acceptable cost on the basis of their picture of all requirements of modern war, including both a blunting of our strategic nuclear capabilities and a defeat of all our other military forces, there would be serious danger of a Soviet attack.¹

It would appear the Soviets have blunted our strategic nuclear capabilities with "essential equivalency" and "parity" because any escalation to the use of nuclear weapons in Central Europe that struck Russian territory would mean high risk that US territory would be retaliated against. The questions of defeating our conventional forces is open to debate.

Twenty years later, Colin Gray states the Soviet Union is putting together a total military structure that could lead to Western military defeat during a war in the 1980's. He concludes:

As of 1978, on the basis of current and anticipated American weapons programs, it is very difficult to write plausible scenarios for the 1980's that the West does not lose.²

We need to examine carefully the Soviet military structure to understand how it could operate in a conventional war with NATO. The 1980's are upon us!

DOCTRINE, STRATEGY AND TACTICS

Dr. William F. Scott reiterates Soviet military doctrine, as Marshal R. Y. Malinowsky wrote about it, as any future conflict would be of unprecedented ferocity, dynamic, highly mobile combat operations, the absence of continuous stable lines or distinction between front and rear, greater opportunities for dealing surprise attacks of great strength against both troops and the deep rear areas of NATO.³ In short a fluid, mobile battlefield where forces and firepower are quickly concentrated at decisive points. Such conventional or nuclear firepower is available to both sides today that forces cannot stay concentrated for very long or they will suffer undue casualties. The battlefield will surely take on depth on both sides by the very nature of the ranges and technological capabilities of both air and ground weapons systems.

Dr. Scott goes on to point out that Soviet strategy, doctrine, and tactics have not been markedly altered since the early 1960's. How the Soviets apply their doctrine is the key. All three editions of Marshall Sokolowsky's Military Strategy published in 1962, 63 and 68 remained essentially the same. All showed that nuclear warfare with rockets was an integral feature of Soviet doctrine. Further, nuclear weapons do not negate conventional warfare; both compliment each other.⁴ As far as the

Soviet military is concerned they are prepared to fight on either the conventional or nuclear battlefield and to employ whatever means will assure them victory. The means this paper deals with is the conventional but we must remember that the Soviets are prepared to go nuclear at any moment.

Military sufficiency is not a useful Soviet term. The stronger the Soviet forces are the better the prospects for peace, progress, socialism and security are. They clearly believe that deterrence is based on capability and victory, two concepts that have diminished in Western military thought. Soviet doctrine and tactics still implement the principle of mass; they simply believe in overwhelming their opponents even on multiple axes.

Military doctrine is the blueprint drawn up by the highest Soviet political leaders that describes in specific detail the shape of the armed forces and the way they are to be used. Doctrine is organized into three parts: strategic, operational and tactical. Strategic success is based on operational results, which are based on the correct application of tactics. The Soviets believe for any given combat situation there is a correct response. These behavior "norms" are based on historic, exercise or model analysis. The tactical commander trains against these norms in repetitive drills. This emphasis on standards and set patterns will be repeated on any future battlefield.⁵ Whereas the American genius for war is to be adaptable, the Soviet's is to be experts at patterns. Therefore, if you know the patterns you know what to expect or how to counter. If NATO could confront the attacking Warsaw Pact with the unexpected in defensive operations the initiative could be taken away from them.

Seven principles govern the Soviets in their military operations.⁶

1. Mobility and high rates of combat operations - designed to keep enemy off balance and under constant pressure by rapid movement, firepower and support.

2. Concentration of Efforts - concentrate troops and weapons on small frontages to achieve superiority at point of attack; artillery remains dispersed but concentrates fires; norms established for force ratios.

3. Surprise and Security - security of plans and operations insures actions when and where least expected with goal of enemy becoming aware too late to react effectively.

4. Combat Activeness - boldness and decisiveness in all combat operations to seize and maintain the initiative.

5. Preservation of Combat Effectiveness of Friendly Forces - use of minimum necessary force, troop dispersion, use of captured logistics, time restrictions on massing, use of well protected vehicles and a good medical system.

6. Conformity of the Goal - mission must conform to actual combat situation; requires a sound estimate; destruction of enemy or seizure of terrain must be done in time prescribed.

7. Coordination - all elements of combined arms and services operate together in battle to carry through to the depth of enemy defenses.

General V. G. Reznichenko has said, "The offensive is the basic form of combat action. Only by a resolute offensive conducted at a high tempo and to great depth is total destruction of the enemy attained."⁷ It is not hard to see how the seven principles of tactical doctrine concentrate on the offensive. The Soviets will undoubtedly follow as many of these principles as possible during any attack of NATO. Whatever the form of maneuver takes, the offensive action will be designed to concentrate a superiority

1. Mobility and high rates of combat operations - designed to keep enemy off balance and under constant pressure by rapid movement, firepower and support.

2. Concentration of Efforts - concentrate troops and weapons on small frontages to achieve superiority at point of attack; artillery remains dispersed but concentrates fires; norms established for force ratios.

3. Surprise and Security - security of plans and operations insures actions when and where least expected with goal of enemy becoming aware too late to react effectively.

4. Combat Activeness - boldness and decisiveness in all combat operations to seize and maintain the initiative.

5. Preservation of Combat Effectiveness of Friendly Forces - use of minimum necessary force, troop dispersion, use of captured logistics, time restrictions on massing, use of well protected vehicles and a good medical system.

6. Conformity of the Goal - mission must conform to actual combat situation; requires a sound estimate; destruction of enemy or seizure of terrain must be done in time prescribed.

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of combined arms forces and firepower in a coordinated manner at decisive points, as quickly as possible, to gain surprise, the initiative, conserve forces and achieve an attack of great depth. The Soviets have built the size and shape of conventional forces to implement these doctrinal principles.

The basic features of planning for offensive operations by Fronts and Armies within a theater of operations (TVD) would apply to either conventional or nuclear warfare. The scheme of maneuver and plan of fire support of these Fronts and Armies will be based on successive intermediate operations prior to reaching the main objectives. Regrouping of forces could take place as the offensive continues. Frontal air assets will be used to reach targets in depth. Artillery will be used to neutralize enemy combat and support forces. A constant balancing of force ratios is attempted between divisions, manpower, tanks, antitank weapons, field artillery and mortars, nuclear launchers and combat aircraft. To insure success of the offensive aggregate numerical advantages of 3 to 1 are minimum on a main axis.⁸ Raymond Garthoff thinks the ratios call for a superiority of four to six to the enemy's one.⁹ Phillip Karber points out the Soviets cannot yet achieve a 3:1 superiority in men and equipment over the whole front.¹⁰ These force ratios play an important role in Soviet tactical planning and will be discussed further near the end of this chapter.

Fronts and armies attempt to penetrate deep into enemy territory by either of two methods:¹¹

1. Attack along one or more axis to split the defenders into separate or isolated groups. These are to be destroyed in detail, with concurrent further attacks towards the enemy's rear depths.

2. Attacks along converging axes to envelop sizeable enemy forces. Surrounded forces are to be destroyed as concurrent attacks continue to the depths. These tactics to either split or surround the enemy are consistent with Soviet military history. A group of German officers describing Russian tactics noted:

Operations against flank and rear, large scale envelopments, and encirclements all played a part. Other maneuvers employed were mobile defense and finally, breakthrough and breakout.¹²

Thus, it can be seen that the Soviets will use any means to penetrate the defense, to encircle and annihilate the enemy and push as deep as possible.

Each Front in the attack of NATO will conduct one main attack and one or more secondary attacks with the Army making the main attack having a narrow zone of advance of 40-50 kms and the remainder of the forces spread out over another 150 kms. The echelonment of armies within a typical Front falls into three echelons:

<u>ECHELONS</u>	<u>SIZE</u>	<u>DISTANCES BETWEEN</u>	<u>REMARKS</u>
Assault	3 combined arms Armies	↑ 15-30 KMS	Main attack Force with at least ½ of force.
Follow-on	1 combined arms Army, 1 Tank Army	↕ 15-30 KMS	Exploits success or replaces 1st echelon units.
Reserve	1 Division	↓	New situations

The organization of a Front may vary depending upon the enemy dispositions and the attack priorities but the preponderance of the force will be in the assault echelon. The Soviets concentrate for the offense by assembling the assault echelon 60-70 kms from FEBA. The leading elements are in forward assembly areas 20-30 kms from the FEBA. The attack is preceded by 30 minutes to an hour or more of artillery preparations. The assault echelon attempts

to penetrate to the opposing corps rear boundary. The second echelon is flexible and may attack by-passed units, reinforce the first echelon, continue the attack or even conduct pursuit operations. The prime purpose is to destroy enemy forces and seize objectives at an average daily rate of advance of 40-50 kms conventionally or 50-80 kms under nuclear conditions.¹³

According to Soviet Doctrine the most likely form of offensive maneuver will be the meeting engagement as the divisions of the Front armies clash at or near the inter-German border. General Major Reznichenko and others who wrote Takitka (Tactics) in 1966 saw that nuclear weapons, range and destructiveness of conventional weapons and the tremendous increase in troop mobility added new characteristics to land war. He predicted the next war:

. . . will be characterized by extreme complexity, the use by both sides of nuclear weapons, wide scope of operations, aggressive development of separate attacks leading to deep mutual penetrations by opposing sides and an absence of continuous fronts. Under these conditions, the most likely form of combat will be the meeting engagement.¹⁴

General Reznichenko goes on to say that according to this perception the battle will be extremely fluid, developing unevenly on various fronts, and will place great emphasis on rapid movement and concentration, followed by rapid dispersals.¹⁵ The strong implication here is that the war will be won or lost on how well each side fares in a long series of meeting engagements. In Chapter 4 of FM 100-5 slight mention is made of large scale movement to contact and the hasty attack but no mention of the details of a meeting engagement are presented--more on this in Chapters III and IV.

The Soviet's view is that meeting engagements will occur under four probable circumstances:¹⁶

1. At the beginning of a war - both sides race to the intra-German border and meet at the border or within FRG territory.

2. After penetration of NATO's front line defense - Soviet forces would then have to meet either NATO's advancing reserves or units shifting laterally.

3. During pursuit - meeting engagements likely either in the chase or against NATO counterattacks.

4. During counterattack - any Soviet counterattack or penetration would be met with flank attacks by NATO.

It is obvious that Soviet doctrine is vitally concerned with the meeting engagement and their literature is full of the tactics and techniques to employ in all circumstances. If NATO does not set their prepared defenses prior to D-day or the defenses are penetrated then the war will surely be a long series of meeting engagements. It would appear that NATO needs to spend more time preparing to execute against the meeting engagement.

Phillip Karber introduces another Soviet tactic that would require it to be countered with a NATO meeting engagement. He points out that the Soviets now view the massing of forces as too vulnerable and so they have abandoned the concept of the major breakthrough in favor of dispersed multiple axes of advance across the entire NATO Central Region. This theater-wide offensive would require high rates of maneuver and last minute concentrations at vulnerable points of the defense to create gaps. This concept increases the quick interposition of forces and chances of deep penetrations through the gaps by mechanized infantry regiments.¹⁷ This is the reason the firepower and manpower of the motorized rifle and tank divisions has grown and why 90% of the 30 divisions added to the Soviet structure since 1965 were motorized rifle. This was also done to have a better capability against the antitank guided missile (ATGM) defenses of NATO.¹⁸

Phillip Karber carries the argument further when he discusses the trend towards Soviet preemptive maneuver with the use of the "daring thrust." The Soviets describe the daring thrust as employing small units equipped with BMPs, strengthened with firepower, to penetrate into the depths of the enemy defenses with the goal of circling around their strong points and exiting on the defender's flank and rear.¹⁹ Therefore, multiple breakthroughs of NATO's defenses not only includes frontal attacks to produce penetrations but also daring maneuvers to take advantage of defensive weak points or gaps in order to deliver blows from all different directions. These maneuvers could also take place before the NATO forces are deployed. In lieu of nuclear weapons to create gaps in the defense the Soviets are calling for preemptive maneuver - attacking the defense before it can be set. Karber thinks there are sufficient indicators to show the Soviets would prefer to launch an unreinforced (pre-emptive) attack to catch NATO before it can deploy to its GDP. Thus, the key for the Soviets to launch a breakthrough or daring thrust is not quantitative superiority, but the extent to which the defense has had time to prepare.²⁰

Colin Gray presents four problems with the preemptive or daring thrust concept. First, the thrusting infantry regiments could be short on on-call fire support. Second, the Soviets would have to decentralize decisionmaking and execution which is uncustomary. Third, the logistical support of the BMP regiments would be tenuous at best. Fourth, the concept would require a major change to air-ground support. However, as he further points out all of these problems can be overcome if the Soviets want to preempt NATO's forward deployment.²¹ Besides the Soviets could be reinforcing the 20-30 BMP regiments so deployed within a matter of hours. The disruption to NATO plans this maneuver would cause would certainly afford the Soviets more

time to deploy the assault echelon and follow on echelons and complete their mobilization. Thus, they would not tip their plans prior to the attack. Any disruption of NATO's deployments would also give the Soviets' assault echelon the opportunity to advance on multiple axes and gain the border region only opposed by the forward deployed cavalry forces. A brief review of comparative force ratios, short-war concept and the timing of reinforcements is now in order.

CAPABILITIES AND TIMING

During the past decade the Soviets have made gigantic strides in fleshing out their conventional force structure both quantitatively and qualitatively. The following chart, compiled by AUSA, shows this comparative improvement in just three areas with the predominance occurring in ground forces.²²

FIGURE 6
AN ELEVEN-YEAR COMPARISON OF THE BALANCE IN EUROPE
1968-1979

	1968					
	NORTHERN & CENTRAL EUROPE			SOUTHERN EUROPE		
	NATO	Warsaw Pact	(Of Which USSR)	NATO	Warsaw Pact	(Of Which USSR)
Divisions*	25	57**	32**	33	37**	19**
Tanks	4,800	11,500	6,000	1,600	4,300	1,100
Tactical ACFT						
Lt Bombers	50	450	400	0	200	200
Close Support	1,500	1,650	1,120	540	980	740
Interceptors	720	3,000	2,000	280	1,360	1,000
Recon.	530	280	200	130	210	180
	1979					
	NORTHERN & CENTRAL EUROPE			SOUTHERN EUROPE		
	NATO	Warsaw Pact	(Of Which USSR)	NATO	Warsaw Pact	(Of Which USSR)
Divisions	27	70 (47)***	45	37	33 (21)***	11
Tanks	7,000	20,500	13,500	4,000	6,700	2,500
Tactical ACFT						
Lt Bombers	150	250	250	0	70	70
Close Support	1,500	1,350	930	625	325	70
Interceptors	400	2,050	1,000	200	1,000	400
Recon	300	550	300	125	200	125

*Division Equivalents. ISS data for 1968 expressed in terms of Brigades. Conversion to Division Equivalents based on 3 Brigades per Division.

**Includes all categories of Readiness (I, II, & III).

***Category I units (fully equipped, 100% manned) are indicated in parenthesis. Balance are Category II (fully equipped, 50%-75% manned).

The key point is that division force ratios for the Soviets in the Central Region improved from 2.3:1 to 2.6:1 with tank ratios improving from 2.4:1 to 3:1. More importantly the chart demonstrates the effort the Soviets have put into conventional forces since achieving nuclear parity.

The next chart shows the current comparison between NATO and the Warsaw Pact in ground force categories and in tactical fighters.²³

Table 2 GROUND AND TACTICAL AIR FORCE STRENGTHS IN THE CENTRAL REGION

Country	Manpower (in thousands)	Equivalent divisions*	Tanks Medium Light	ATGW†	Artillery, rocket launcher and heavy mortars	Armed helicopters	Tactical fighters	Remarks
NATO								
Belgium	47	2	400	200	675	80	100	150
Britain	138	5	1050	500	2550	325	150	620
Canada	12	1	150	-	500	50	50	70
Netherlands	30	2	425	100	700	100	100	175
West Germany	800	14	3000	350	5750	1150	600	650
United States	250	7	2150	600	3500	1050	350	1150
	1277	31	7175	1750	13675	2755	1350	2815
France	90	5	750	250	1250	120	125	550
Totals	1367	36	7925	2000	14925	2875	1475	3365
Warsaw Pact								
Czechoslovakia	165	10	3000	-	1000	900	50	500
East Germany	100	6	1700	100	600	750	50	350
Poland	240	15	3000	250	1400	1500	50	800
Soviet Union:								
In Eastern Europe	425	28	8000	600	4300	3600	700	1300
In Western USSR	495	34	9000	700	5200	4500	850	1500
Soviet total	920	62	17000	1300	9500	8100	1550	2800
Totals	1425	93	24700	1650	12500	11250	1700	4450

*Divisions, brigades and similar formations, aggregated on the basis of three brigades to a division.

†Multiple launchers carried on one vehicle are counted here as one ATGW. Launchers carried on the tanks or helicopters shown in this table are excluded. All figures relate to launchers, not missiles; there are likely to be several missiles for each launcher.

Despite the balance in manpower, the division ratios still show 2.6:1 in favor of the Soviets. The relative size of US and Soviet divisions is not as important as the number of combat vehicles each has, which also slightly favors the Soviets (for example, in tank divisions the Soviets have 325 tanks to US with 312). The Soviets are also favored in 3:1 tank ratios and 4:1 indirect fire support ratios. There is nearly a 1:1 ratio in all other categories. In terms of the fire and maneuver elements to implement Soviet doctrine and tactics the Warsaw Pact outnumbers NATO forces by about 3 to 1.

Both NATO and the Warsaw Pact have reinforcements to be deployed over time to assist the deployed combat forces. The following chart shows a rough comparison of the respective division equivalents available to both sides.²⁴

**FIGURE 7
DIVISIONS (AND EQUIVALENTS)
FOR REINFORCEMENT***

	NATO	WARSAW PACT
Armored	10 1/3	27 2/3
Mechanized	7 2/3	76
Other	34 2/3	11 2/3
Total	52 2/3	115 1/3

*NATO reinforcements include only existing active and reserve formations. Warsaw Pact reinforcements include all Category II and III divisions of Poland, Czechoslovakia and East Germany, plus all Soviet divisions in the European USSR.

The key point is that over time the Soviets still maintain a 2:1 ratio in their favor.

In a memorandum to the NATO Defense College, Brigadier General Robert Close, BE Army, presented his assessment of the deployment and reinforcement capabilities of the Warsaw Pact. Limiting himself to a quantitative assessment, he states that the Pact can attack within 48 hours with 39 divisions

(27 Soviet, 6 East German and 6 Polish) in the assault echelon. He adds to this number part of the 13 Czechoslovak divisions, some of the Russian air-transportable 10 divisions and 6 brigades, as well as 2,500 fighter aircraft. The follow-on echelon would be composed of 60 Soviet divisions stationed in the European part of the Soviet Union and be employed into action in 5 or 6 days after D-day. NATO is capable of opposing this force with 22 divisions and 2100 aircraft. Taking only the assault echelon attack into account the opposing force ratio is 2:1 in favor of the Pact.²⁵ Taking all Soviet and Pact divisions into account the opposing force ratios in 5 or 6 days would be 3.7:1 in favor of the Pact. This gives NATO the capability of mobilizing 5 more division equivalents in 5 or 6 days and assumes the use of the 2 French divisions stationed in the FRG.

Colon Gray agrees with John Erickson (and BG Close) that certain of the E. European divisions could be counted on to join the first echelon. They estimate the Warsaw Pact could deploy 48 divisions against NATO's Central Region from a standing start and reinforce with another 50 divisions within 30 days from the Soviet Union. Colin Gray thinks the number 48 divisions could be as high as 52. To counter these 102 divisions, NATO has close to 28 divisions ready immediately, if you count the 2 French divisions and supposedly ready reserves of 2 armored, 5 mechanized and 7 infantry divisions. However, they too point out that many of these units are not easily transferable to the front within the 4-6 week critical period.²⁶ Appendix 2 shows the Warsaw Pact ground forces available to support Gray's estimate. Appendix 3 shows the comparative mobilization of NATO/Pact to support Gray's estimate. Once again the point is made that the opposing force ratios over the first 30 days still favor the Pact by better than 2:1 and at times 3:1.

From these various sources, it is clear that the Soviets can generate the preponderance of conventional forces within the first 30 days of a war in the Central Region at better than 2:1 ratios across the entire front. Since they have the strategic initiative to start the war at a time of their choosing they can also assemble these forces in groupings of their own choosing and at locations convenient to their attack plans. It is doubtful whether NATO could detect or properly analyze these dispositions with sufficient certainty to know where the main and supporting attacks are coming from. Therefore, the Soviets principle advantage in initiating a land war against the Central Region is their ability to concentrate forces with an overall 2:1 ratio at places of their choosing to achieve at least 6:1 ratio. Some authors think they could achieve 8:1 ratios. Will NATO be able to calculate where these heavier concentrations are attacking in time to react?

The Soviets organize their march columns to travel 20 to 30 km/hr by day on roads and 15 to 20 km/hr on roads by night and to travel 5 to 15 km/hr cross country. They organize their forces in column to deploy the advance guard in 20-30 minutes, the advance guard main force in 1 hour and the regimental main force in 2-3 hours.²⁷ Considering their ability to move at night and the known distances from present locations and their doctrine and practice of camouflage and hiding, it is possible for them to occupy forward assembly areas 50-80 km behind the border and remain undetected. They could then move forward at night and attack across the inter-German border in a matter of 5 to 8 hours. Are there other indicators besides force-ratios and mobilization capabilities that point to a short warning/short war concept for the Soviets?

Steve Canby has postulated the Soviets are assuming a short war based on shock power as indicated by their strategic needs, military doctrine and

operational practices. Strategically, the Soviets lack the resources for a long war against NATO and want to achieve a quick victory to insure the support of their client states in E. Europe.²⁸ In addition to the points already made in this chapter, he points out three other doctrinal and operational facts about their combat support and service support systems.

The most important internal constraint on the Soviet military capabilities is their maintenance system. The system is not geared up for the long haul. The Soviets have a quality control problem in production which causes frequent breakdown of equipment and time consuming repairs. To circumvent this they store most of their equipment and maintain low readiness postures in their maintenance outfits. Thus, they have a trained maintenance shortfall. After the equipment begins to require maintenance in war the Soviets will require considerable time for repairs. Thus, their maintenance system is geared up for a short war concept. The Soviets echelonment deployment concept could also simply replace units with maintenance problems. A second internal constraint is imposed by the Soviet truck parts. Soviet trucks lack cross-country mobility and are also maintenance-prone. Their reliance on civilian trucks to flesh out the force in war could restrict the production base. The longer the war lasts the more destruction occurs to the roadnets and the more the cross-country mobility factor takes ahold and slows up critical resupply efforts.

The Soviets also have a lean logistical structure which could become overburdened without sufficient truck transport. The third short war indicator is the shortage of military engineers. The longer the war the greater the need for engineers to repair damages and keep open lines of communications. However, Soviet engineers are organized primarily for combat tasks well forward to include river-crossing support. Soviet engineer

support is not organized for a slow moving offensive but rather for a blitzkrieg-style offensive.²⁹ For all the reasons presented, the most difficult scenario for NATO planners and forces to cope with is a short war concept.

A Worst Plausible Scenario

The current dispositions of Warsaw Pact forces can best be seen from one of General Sir John Hackett's depictions at Appendix 4. This diagram shows that the Soviet groups of armies, composed of 20 divisions in East Germany alone are posed within short marching distance from the intra-German border and could easily, as previously shown in this chapter, strike with little warning with at least 6:1 opposing force ratios at several decisive points along the border. General Sir John Hackett also proposes what this scheme of maneuver might look like at Appendix 5.

Remembering that the Warsaw Pact holds superior conventional force ratios for at least the first 30 days of the war, the Soviets would gain the element of surprise by sending 20-30 BMP regiments pouring over the border and around the covering cavalry units to fight meeting engagements with the NATO forces either moving forward or still mobilizing. The Soviets would then follow up with the remainder of the first echelon of 48-52 divisions within 24-48 hours to reinforce initial successes or engage moving or in place NATO forces. An additional 50 divisions would then be committed within 5-6 days to follow up and secure deep objectives within 10 days of D-day. The initial disruption to NATO war plans would cause an operational environment of meeting engagements which NATO is not adequately trained or prepared for, but for which the Soviets practice

regularly. This scenario is perfectly in tune with the seven fundamental principles

of Soviet offensive doctrine. The first use of nuclear weapons by NATO would be extremely difficult because of the intermingling of BMP regiments, the assault echelon and follow-on echelons of Pact Forces with NATO forces and the German population. The quickness of the attack would complicate the nuclear release procedures, and decisionmaking processes of NATO.

Colin Gray points out that even if NATO uses nuclear weapons first, the Soviets, if they can maintain a fast moving attack, might not even have to retaliate because they still can achieve their objectives conventionally. In short, he concludes everything favors attempting a short, blitzkrieg-type war that is intended to last only two or three weeks.³⁰

The political objective of such a Warsaw Pact attack would be to seize deep objectives inside the FRG, such as the industrial areas along the Rhine River. These objectives, quickly obtained, would insure several forceful bargaining positions for the Soviets.

1. A heated debate would occur in France over whether they should enter the war when it is clear the Soviets have no designs on their country.

2. As BG Close suggested, the Soviets could force the NATO alliance to accept a demilitarized and denuclearized zone in the FRG obliging the FRG to withdraw from NATO and cause the pullback of US forces.³¹

3. The Soviets could simultaneous to the attack, launch a propaganda campaign to convince the other members of NATO that their only objective is to separate the FRG from NATO and that they have no quarrel with the other members. The Soviets could reunite Germany under their hegemony and promise them a neutral position like Yugoslavia or they could keep them divided.

4. These type of actions would mean the end of NATO and of US forward presence in Europe, and probably the eventual control of Western Europe.

The next chapter will analyze how effective NATO's concept of the Forward Defense would do against such a short war scenario from a conventional perspective.

CHAPTER II

FOOTNOTES

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CHAPTER III

ANALYSIS OF THE FORWARD DEFENSE

If NATO leaders were convinced in the early 1950's that the conventional defense of Western Europe required 96 divisions, but now only have from 22 to 28 divisions ready to fight the first 30 days of war with, how will these current numbers of divisions be employed in battle to make up for the ones that never get created? After discussing some general considerations about how the conventional battles will be fought, the remainder of the chapter will analyze the operational strategy of the Forward Defense from the four dimensions of strategic assessment of Michael Howard. The operational dimension will examine the employment, defense in depth and reinforcement of defending conventional forces. The logistical dimension will examine the supportability of NATO's defense and its mobilization backup. The Social dimension will examine the national understanding, commitment and will in support of NATO's defense. The technological dimension will examine how the current conventional means can influence the battles and alter the tactics used. The chapter will end with an overall assessment of the conventional Forward Defense showing the operational essentials and the necessary conditions of an operational and tactical environment needed to oppose the worst plausible conventional scenario. First, a look at the general considerations.

GENERAL CONSIDERATIONS

NATO's current level of conventional defense would require a major attack by the Warsaw Pact in order to breach or defeat the defenders.

However, NATO's ability to fight for time is limited by the nature of the Forward Defense and the forces available. Kenneth Hunt points out that there has always been some disagreement between NATO partners on how long NATO forces ought to be prepared to fight conventionally as evidenced by their differing levels of stocks and reserve structures. He thinks the forces should hold out for weeks and be capable of preventing breakthroughs until the reinforcements can arrive. He rightly surmises that no amount of war gaming or mathematical analysis can determine the length of time the existing defenses can resist major attack. But, there is common consent among European members that the conventional defense could be of short duration.¹

The concept of Forward Defense has always been central to NATO strategy based on strong political imperatives of population and industry. But these defenses in the sense of providing security for the entire border has never been possible with the level and pattern of forces that NATO has deployed. What forward defense means in practice is that NATO can start fighting on the border, regardless of any requirements for more depth. Kenneth Hunt thinks the Forward Defense concept should have some more flexibility to it. If the defenses were to spread reduced resources across the entire front, in an effort not to give an inch, it would run the risk of being strong in no place and liable to be defeated in detail.² The current dispositions of NATO's corps sectors seems to suggest an equitable distribution of forces as Hunt cautions against--see Appendix 6.

The current organization of the Forward Defense relies on four groups of forces: screening and covering forces deployed along the border to identify aggression and canalize it; main forces manning the defensive areas and providing local counterattacks; immediate reinforcements in the

United States, Britain, Germany, the Netherlands and other countries; and reinforcements of reserves requiring time and training. French forces could fit into any of these groups depending on political decisions and timing. But, the forward defense leans heavily on the screening and main forces until the reinforcements arrive. The only way NATO can redress the geographical advantage of the Warsaw Pact is to start reinforcing first but the initiative lies with the Pact, particularly in the worst plausible scenario. The nub of the problem is how to decide upon the ratio of forces on the ground to their reinforcements. Commanders on the ground are concerned about too heavily a reliance on reinforcements who might arrive too late.³

In addition to the difficulties of linear dispositions and reinforcements, the current operational strategy has other problems. First, NATO concentrates most of its forces in close proximity to the border, retaining very few forces in reserve. Second, this essentially linear defense is precisely the type of deployment that will increase the chances of success for the Warsaw Pact. Third, the political realities of forward defense preclude NATO from adopting a more mobile defense in depth.⁴ Faced with these realities, COL Staudenmaier calls for a system of fortifications and barriers as terrain multipliers in peacetime to act as a shield behind which reinforcements can be effected. He sees that territorial forces could help man these barriers freeing some main units for the needed reserve force. But, he points out that political and economic considerations preclude this alternative and force NATO strategists to look elsewhere for force multipliers.⁵

Another problem of the operational strategy is what the purpose of the conventional forces are for. Steve Canby points out the Europeans remain advocates of the "trip-wire" strategy while the Americans think a conventional

defense can be offered without immediate escalation. He says that this dichotomy has not been addressed directly. He blames the US for failing to propose a reasonable alternative to NATO's conventional weaknesses. This is due to its philosophy of war and systems analysis approach which has left its approach to war dated.⁶ On the other hand, NATO's approach to war is to hold ground, pound the enemy with airpower and gain time for escalatory decisions against the enemies rear and homeland.⁷ Canby believes NATO should adopt a maneuver approach to the defense instead of the firepower one it now supports.

The most comprehensive critique of the Forward Defense strategy is presented by Justin Galen, who is a former Defense Department official using a pen name. He submits the alliance has not been able to deal objectively with shortcomings in strategy and failings in capabilities. Much of NATO's weaknesses stem from poor leadership, a weak planning and budgetary system, a lack of proper force improvement priorities and the lack of a standardized or integrated effort. He perceives there are twelve major weaknesses in NATO's posture.⁸

1. The splintering of NATO's forces in the Central Region into National Corps zones exacerbated the declining strength, maldesployed its land forces to the wrong areas, and deprived itself of tactical and strategic mobility.

2. Forward defense forced each NATO country to deploy virtually all its combat forces along the border thus leaving no reserves or defense in depth capability. It also locked NATO's best armored units into positioned defenses where it will be difficult to reconcentrate them to the main Warsaw Pact advances. It takes NATO forces too long to move to their forward positions, it stretches the defenses like a balloon to be easily popped,

it makes NATO no stronger than its weakest link, it creates many gaps in the defensive line, it spreads the firepower thinly and increases the Pact's numerical superiority in weaponry and range, it complicates support, air cover and air defense and close air support because of the lack of maneuver space and maximizes the probability of German civilians suffering if war occurs.

3. NATO combat units because of poor caserne locations have difficult road marches to the border that take time, produce fatigue and maintenance tasks, are vulnerable to air attack and are vulnerable to surprise attack by the Pact who can get to the border first.

4. NATO never fully came to grips with developing an integrated approach to passive and active air base defense and dispersal, particularly to surprise attack. Almost all NATO air forces and armies use somewhat different interdiction and close air support tactics. A similar integration is needed in avionics and air munitions capabilities in I.F.F., intercept avionics and missiles and weapons delivery and air-to-air ground missiles. There has not been a collective and coordinated approach to stopping Soviet armor. NATO's all-weather and night attack capability still is lacking. The Nike-Hercules high altitude SAM defenses become obsolete in the late 1960's. They can now be suppressed by saturation, ECM or maneuver avoidance techniques by modern Soviet fighters. Many NATO combat units still lack effective, short-range, low altitude, all weather air defenses that are vulnerable to Soviet attack.

5. NATO force planning forced each nation to develop its own force structure, tactics and strategy with little leadership from the NATO military committee, SHAPE. This created countless additional incompatibilities

in NATO tactics, weapons and methods of employment. This makes cross-reinforcement difficult if penetrations begin to occur in the forward defenses.

6. NATO nations failed to improve the standardization of their force mix and tactical technology. NATO failed to develop a common answer to how to develop armor and anti-armor capability, artillery, airborne early warning, and C³ systems. These will all complicate the ability to reinforce each other during war. The consequence of these actions was that NATO failed to maintain its lead in tactical technology over the Soviets.

7. Each NATO nation also adopted its own approach to training and readiness. In most cases, nations made a series of cuts that left their forces dependent on weeks of warning and buildup. No common approach was developed to show what kind of unit training and degree of readiness was needed, or how reserve forces should be prepared. Thus, NATO became increasingly vulnerable to an unreinforced attack by the Pact and failed to develop an effective set of integrated contingency plans to cope with this possibility.

8. The US made NATO logistics and support a national responsibility in the 1950's to avoid funding during a period when most allied equipment was furnished through US military assistance aid. The eventual result was an uncoordinated logistics system unable to provide mutual support. Despite NATO requirements for stocks and war reserves each member largely went its own way in isolation. Some nations brought six days of stocks of some items and sixty days of something else. Most nations failed to adequately stock high cost items like air-to-air and air-to-ground missiles, tank rounds, ATGM rounds for even ten days of intense combat. Most nations also failed to create national logistics and LOC capabilities.

9. The US replaced NATO's nuclear "trip-wire" with flexible response in name only. No real planning for theater nuclear warfare or chemical-biological warfare took place for over a decade. Further, no real improvement in NATO's capability to operate in an NBC environment has taken place. NATO has also lost its lead in theater weapons and has become increasingly vulnerable as a result.

10. NATO did little to come to grips with the impact of French withdrawal. France's general purpose forces are 30 percent of NATO's strength and yet there is uncertainty as to their assistance in time of war. The French LOC cannot be counted on in any planning or preparations.

11. NATO failed to tie force planning and structuring to the best intelligence estimates of Warsaw Pact tactics, strategy and force structure because there was no common agreement on the SHAPE assessment. The US caused a consensus-oriented approach to NATO intelligence and thereafter it has been difficult to gain sufficient consensus.

12. Equally important the NATO intelligence community never evolved the collective security or counter-intelligence capability it needed. Most NATO war plans and major studies are a compromise between varying views. NATO debates and deliberations gave the Warsaw Pact an almost perfect view of its own capabilities which means the Pact knows precisely NATO's peacetime and wartime vulnerabilities, and can plan accordingly.

Justin Galen concludes that NATO's lost decade was due to our involvement in Vietnam, our resupply of Israel in 1973-4 and the fact that America could not criticize other NATO members because of her own readiness weaknesses. He realizes that the last three years of NATO's efforts in most areas mentioned have seen some degree of incremental improvement, but that much more needs to be done to bring about a balance of forces

against the Pact. He also reminds us that while these improvements continue, the real problem is to match this progress by improvements in NATO's operational strategy.

These general comments and considerations then set the stage for a more detailed assessment of the operational strategy of the forward defense from the four dimensions of Michael Howard. This assessment will tend to either flesh out or point out disagreements with Justin Galen's assessment, but in either case lay the groundwork for a final review of the prospects of how tactically and operationally sound the Forward Defense will be in engaging the Warsaw Pact in battle.

Geoffrey Lee and Alan Lee Williams in their book, Crisis in European Defense, published in 1974, point out that an attack on a large scale by about 25 divisions backed up by 50 more is a distinct possibility by stating: "This is the most realistic scenario on the Central Front and planning over the next 10 years should continue to take it seriously."⁹ As we begin to examine the current plans of NATO we need to remember this scenario and the worst plausible aspects of it proposed in the last chapter.

OPERATIONAL DIMENSION

This section will analyze the operational aspects of NATO's war plans to defend conventionally against the two most probable attacks of the Warsaw Pact. The analysis comes from unclassified sources and the reader is cautioned that the actual war plans are not fully represented. However, the tactical and operational doctrine, upon which war plans are based, will be. Good war plans are based on sound military doctrine. The analysis will concentrate on the disposition of defending forces, the uses of

firepower and maneuver, the risks of enemy penetrations or breakthroughs, the depth of the defense to include rear area security, the stationing of forces and reaction times, the deployment of reinforcements, the meeting engagement, the scope of US and allied doctrine and the adequacy of contingency planning.

There are wide and diverse opinions in the literature about defending NATO as to how all of these military factors should influence the battle. Appendix 7 contains summaries of the proposals of fourteen (14) noted writers on NATO defense. Sorting out these proposals to arrive at the essential points of their concerns one can discern several important operational concepts that form the heart of the matter. All authors agree on one point--the current conventional defense is not adequate to insure a credible defense. Each has his own solution to the problem. However, each agrees that the Forward Defense must have some depth to it; the defending forces must be capable of maneuver and counterattack; reserves must be present and reinforcements must be timely; some structure changes are necessary but all forces must be highly ready for war; and, the new missile technology must be quickly incorporated into the doctrine. Let us now examine these military factors in some detail to see if the current operational strategy of the forward defense is adequate and based on sound military tactics and techniques.

Regarding the dispositions of forces, we have already seen the war plan calls for "cordon-like," linear dispositions that "hug" the border offering very little depth to the defense. In many instances the covering forces are indistinguishable from the main defensive forces. The nature of the terrain dictates how close to the border the dispositions are.

The nature of the National Corps boundaries, seen in Appendix 6, cause an even distribution of divisional and brigade-sized forces along the 1000 kilometer defended border opposite East Germany and Czechoslovakia. The corps sectors are somewhat narrower in the Northern Region. Based on the defensive tactical principle of interlocking and overlapping fields of fire, it's safe to say that not all terrain along the 1000 km border is covered by direct fire weapons or observed indirect fire. Thus, gaps are likely to occur in the defensive belt. Simple mathematics show that eight corps covering about 1000 kilometers means each corps covers about 125 kilometers or each of the average 2.75 divisions per corps cover 45.5 kms each. See discussion of Richard Lawrence and Jeffrey Record about the disposition of corps and divisions along the 1000 kilometer border.¹⁰ Thus, division commanders have to accept gaps within and in between their defenses. Where there are gaps BMP regiments can penetrate to envelop the defending forces as can other combat units of the Warsaw Pact, if necessary. As we have seen in Chapter II, the Pact can concentrate at 6 to 1 combat (maneuver units) ratios with at least 8 to 1 in artillery ratios at several decisive points along the border. These force ratios coupled with enveloping BMP regiments are likely to cause breakthroughs to occur. This is more likely because it will be difficult to quickly shift NATO forces laterally in the rugged border terrain of CENTAG and southern NORTHAG, particularly when their forces are engaged by Pact holding forces.

John Keegan in analyzing the future of battles on moving battlefields addresses breakthroughs thusly:

If the attacker is to achieve his breakthrough, therefore, the enemy must be made to stand, to fight resolutely, that is, on the ground on which he is attacked, replacing the troops progressively consumed in its defense with others

from his reserves until he has no more to feed forward. If then the attacker, by better husbandry, still retains a surplus, and if that surplus contains a sizeable armed element, he is in a position to achieve armored breakthroughs.¹¹

In the case of NATO's linear defenses it chooses to "stand" at the border and engage the attacking forces with little or no reserves to replace the consumed defenders. The Soviets have ample surplus of armored elements composed in echelonment and their doctrine stresses breakthrough tactics. Hence, the risks are very high that multiple breakthroughs will occur all along the defensive line, probably a minimum of one breakthrough per corps area.

In assessing the breakthrough problem, Robert Fischer thinks the most favorable option for the Warsaw Pact would be to concentrate a preponderance of forces in one or two corps sectors and create one major breakthrough. He agrees that the breakthrough would be NATO's most severe test, conventionally. In this major breakthrough the Pact could allocate 235,000 men against a corps of about 40,000 men, leaving 330,000 men (a ratio of 1:1) for holding actions on the rest of the front. However, he thinks the more likely options for the Pact would be to attempt multiple breakthroughs. The force levels here would be almost halved at each of several breakthrough points but still sufficient to create the breakthroughs. In either of these options, he points out, the only reserves are the French Corps of two divisions and one Canadian brigade. The major breakthrough, if detected soon enough, could be reacted to by these reserves but considerable FRG territory would be gained by the Pact and then they still outnumber the reserves. He further points out that if three divisions were pulled off line, a reduction of 12% of the forward strength, the major penetration would be more uncertain of success. But, if multiple breakthroughs

occurred then the reserves would have to be parcelled out leaving the Pact with the advantages. Robert Fischer sees the only viable option for the forward defender against superior odds is to trade space for identification, delay and attrition. He further sees that the respective replacement systems of both sides, favors the Pact to try to overwhelm NATO defenses by a short, intense attack, which would exclude most of NATO's replacements from the fight.¹²

FM 100-5 outlines the doctrine to confront the breakthrough by telling division commanders to be willing to concentrate firepower and up to six to eight of their maneuver battalions on one-fifth of their front to meet breakthrough forces of 20-25 battalions. They must cover the remaining ground with air and ground cavalry, remaining battalions and attack helicopter units. If these concentrations cannot effect 1:3 combat ratios at the breakthrough then effective defense is not possible, and division commanders must trade space for time by going to the delay.¹³

From the standpoint of comparative force and firepower ratios, the Pact concept of echelonment, the existing gaps in the forward defense prior to the start of the war and the US doctrine to create more gaps in order to concentrate divisional forces, it seems reasonable that the Pact will take advantage of these "holes" in the defensive line to further encircle the defenders with both their assault and follow-on echelons (to include BMP daring thrusts) and to push their breakthroughs deep into the FRG. This tactic is consistent with their doctrine and based on their WW II experiences.

As Colin Gray points out, the Soviets are well aware that it needs to punch only one or two holes in the "theoretically cohesive" forward defense of NATO, particularly in NORTHAG, to be in a position to effect

a potentially war winning envelopment. NATO's forward covering forces are not designed to hold an invasion and should NATO's forward defenses be absent in critical sectors (Dutch corps isn't on time) or be routed precipitately, then NATO runs the risk of defeat.¹⁴

In another study, Colin Gray thinks the outcome of the breakthroughs would cause NATO to trade space for time--space it can't afford to lose and time it cannot put to good use. He says the immediate shock of Soviet armor is likely to be so severe, with tactical surprise, that NATO might not recover from the initial punch. Also, the weight of the attack would not afford much time to react regardless of any space traded.¹⁵ If this analysis is correct, then NATO needs an operational strategy which allows it to roll with the first punch, stabilize a defensive line or reduce the Pact penetrations, mobilize and then conduct counterattacks to restore the border. However, in still another study, Colin Gray points out that NATO cannot afford to trade much space for time because the more space NATO trades the more vulnerable her supply lines become, particularly the main seaports. He thinks if Pact forces cause breakthroughs, the pace of the evolving threat to NATO is likely to outstrip NATO's ability to reorganize for an effective rearward defense as communications will be destroyed or jammed, front lines will disappear and Soviet airborne units will cause deep confusion.¹⁶

Considering the possibilities of breakthrough if the forward defenses were not emplaced and a worst plausible scenario attack occurred, one gigantic multiple breakthrough would occur before the NATO forces could assemble and become fully deployed. This "preemptive maneuver" led by "daring thrust" of 20-30 BMP regiments, quickly followed by the assault echelon of Soviet forces

would be an application of Liddell Hart's strategy of the indirect approach. The battlefield would then turn into a series of meeting engagements, which as we have seen the Soviets are fully prepared to fight. These meeting engagements would add considerable depth to the battlefield inside the FRG, which would complicate long range target acquisition and application of firepower, both land and airpower, to be applied against the Pact forces in depth. It would also complicate the employment of TNF against the follow-on echelon.

Since in all probability the two French divisions and Canadian brigade would be insufficient reserves to stop multiple penetrations of the forward defenses and would simply join the other NATO forces in meeting engagements if the preemptive maneuver was successful, let us examine the ability to mobilize and reinforce current NATO forces. In either case these reinforcements would be needed to prevent defeat.

Just as certain force ratios results from forces immediately available these ratios are altered by reinforcements from both sides. As seen in Chapter III the beginning 2:1 ratios favoring the Pact extend to 3.7:1 in 5 or 6 days. For sure the war will effect the rate of mobilization and reinforcement on both sides, except in America, so it is assumed here that the war will affect both sides equally. America's reinforcements will be shown separately. Reinforcements will only be shown for the first 30 days to follow the worst plausible scenario (short war). The comparative (cumulative) divisional rates of NATO and Warsaw Pact are:¹⁷

DIVISIONS

<u>COUNTRY</u>	<u>M-DAY</u>	<u>M+7</u>	<u>M+15</u>	<u>M+30</u>
Belgium	2	2	2	3
Canada	1/3	1/3	1/3	1/3
France	2	5	5	5
FRG	11	14	14	14
Netherlands	2	2	2	3
Britain	3	3	3	3
TOTAL	20 1/3	26 1/3	26 1/3	28 1/3
United States	4 3/3	6 1/3	7	11
Warsaw Pact	45	68	76	98

The comparative force ratios resulting from these reinforcements show the Pact favored at M-Day by a 2.2:1 ratio (not counting 2 Belgium and 2 French divisions). Then assuming the French decide and the Belgians arrive in the next few days by M+15 the ratio is 2.1:1 in favor of the Pact; by M+30 the ratio is 2.5:1. Thus, in a worst plausible, short war scenario the Pact is capable of achieving breakthrough ratios and of maintaining their combat superiority in ground forces to accomplish their D+10 missions deep into the FRG and maintaining them for 30 days.

In terms of combat aircraft the opposing numbers and ratios are:¹⁸

COMBAT AIRCRAFT

<u>NATO</u>	<u>M-DAY</u>	<u>M+5</u>	<u>PACT</u>	<u>M-DAY</u>	<u>M+5</u>
Belgium	140	140	Czech	450	450
Britain	130	350	E. Germ.	400	325
Canada	50	50	Poland	850	825
Denmark	116	116	Soviets	<u>1,300</u>	<u>2,080</u>
France		318		3,000	
Netherlands	160	160			
US	260	1,734			
FRG	<u>580</u>	<u>580</u>			
	1,436	3,448			

M-Day Ratio Pact/NATO = 2.1:1

M+5 Ratio Pact/NATO = 1.1:1

The Warsaw Pact has a clear superiority to assist in the breakthroughs or initial meeting engagements for the first few days and then the combat aircraft all but even out. This further illustrates the desirability of a surprise attack by the Pact using the preemptive attack scenario. General Hackett portrays a valid picture of the conduct of air operations by showing NATO adapting a concept of defense in depth with a fighter barrier deployed forward of the missile belt to cover the ground forces, then a belt behind the missiles of combat patrols to complement rear area point defenses. He thinks the realities of war will force the gaining of air superiority and the providing of close air support together.¹⁹ I agree.

In the worst plausible scenario, if the preemptive attacks were successful or if the border was defended and breakthroughs occurred, as the force ratios indicate, the likelihood of meeting engagements in depth occurring between all sized forces from platoons to divisions is extremely high. The US and German tactics adequately cover how to conduct these meeting engagements at battalion level and below (there might be some debate on this point). But, there is insufficient doctrine and no contingency plans on how to conduct large scale meeting engagements on the operational level for brigade and larger sized units; this also applies to the lateral shifting of large units in the defense.

FM 100-5 outlines that in mounted warfare the corps and division commanders must ascertain the location of the enemy breakthrough efforts by "seeing" into the enemy's reserves of the assault echelon and the follow-on echelon before they overwhelm the initial defenders. Then, maneuver units must be set in motion towards battle positions in the path of the enemy's main thrusts. Artillery must be concentrated. Terrain must be reinforced

by barriers and obstacles. Airpower can concentrate heavy firepower before ground elements are committed.

During the critical phases of the defensive battle task forces or teams are moved from battle position to battle position, or called upon to counterattack within a deep sector of a highly active defense. It is clearly the corps and division commanders responsibility to "see deep" and to concentrate the forces in a timely fashion. If they cannot concentrate to achieve 1:3 ratios against the Pact they are to conduct delaying operations. The defenses must be elastic to absorb the attack, weaken it and then destroy it. But, the overall coherence of the defense must include coordination of the flanks with adjacent brigades and divisions. The general line of the FEBA (FLOT) should be maintained along the border. The rear area will have few reserves so all support elements must be prepared to fight.²⁰ The discussion of the movement to contact and conduct of the hasty attack in Chapter 4 of FM100-5 is as close to the meeting engagement as the doctrine gets. No doctrine is available on conducting large scale meeting engagements in-depth while moving to the GDP, or how to laterally shift engaged forces and conduct attacks after penetration of the defenses occur. The coverage of the meeting engagement in Soviet doctrine is far more extensive. However, the basic U.S. doctrine is to fix the forward enemy elements in place with firepower, find gaps, weak spots or open flanks and move through them rapidly to attack in-depth. Speed and momentum is essential.²¹

General Starry summarizes these concepts (excluding meeting engagements) as defensive attacks by fire and maneuver at critical times and places based on seeing deep to find the following echelon, moving fast to concentrate, striking quickly before the defense is broken and finishing the fight quickly before the reinforcements arrive; all this while using

terrain to its best advantage.²² The doctrine is sound providing the corps and division commanders: 1) can "see deep" in a timely manner; 2) have sufficient forces to concentrate at the point of breakthrough or can get reinforcements to reinforce front line units or to attack the deeper penetrations; or, 3) be able to react out of their casernes and meet the enemy after a surprise attack with a coordinated, and rehearsed contingency plan based on sound doctrine and knowledge of the terrain. However, if any one of these three requirements cannot be met, then NATO has a different operational environment. For example, if the "preemptive attack" of daring thrusts accompanied by vigorous air attack get deep into the FRG quickly, how many of the doctrinal requirements could be met? Would the commanders be able to "see deep" when all their communications aren't in yet and some of it is being destroyed and another one-third of it being jammed, and the sensor devices are trying to locate the fast moving BMP regiments and follow-up Soviet divisions, and there's no coordinated plan of employing the other intelligence means because the NATO forces are not at the border fighting a set-piece battle on familiar ground but rather are on unfamiliar ground? With little reinforcement capability for the first 7 days of these meeting engagements, would the senior commanders be able to concentrate sufficient maneuver and artillery forces to stop the 98 Soviet divisions at 3.7:1 odds?

It is evident that NATO commanders would be more confident of being able to answer these questions in the affirmative if there was a common view of a doctrine to counter the Pact strategy of meeting engagement and its tactics, if there were rehearsed contingency plans to cope with the possibilities of surprise or breakthrough attacks, if there were sufficient

ground maneuver forces to lower the odds and if there were faster reinforcements to turn the tide of battle and conduct large-scale counterattacks against the elongated Pact attack columns and supply lines well into the territory of the FRG. What is also evident is that the concepts of the active defense, as applied in the defense of the FRG, are tactical concepts designed to fight a defense of limited depth across a broad front with abundant firepower and only local maneuver being conducted by battalion

elements, mostly companies and platoons. What is needed for the prospects of the preemptive attack or multiple breakthrough attacks is an operational strategy (and corresponding doctrine) which pits firepower and maneuver into situations of meeting engagements conducted at the brigade level and higher. Before addressing these points further let us briefly examine the logistical, social and technological dimensions. For, any operational concept must be supportable to be effective.

LOGISTICAL DIMENSION

This section will analyze the logistical aspects of NATO's war plans to examine the support available for the operational dimension. The analysis will concentrate on the key principles of logistics, the long-term Defense Program, the readiness of the forces, host nation support and interoperability, stockage of equipment, repair parts and ammunition, lines of communication, the transportation system and industrial mobilization. The logistical support of operations is paramount to success and this is very important to the "come as you are" situation NATO will find itself in for at least 90 days.

Martin Van Creveld in his book, Supplying War, in which he analyzes logistics from 1805 to 1945, puts logistics in the art of war into perspective by characterizing it as, "an endless series of difficulties succeeding each other."²³ He goes on to place logistics into the total perspective of war by concluding:

That all warfare consists of an endless series of difficulties, things that go wrong, is a commonplace, and is precisely what Clausewitz meant when talking about the "friction" of war. It is therefore surprising that the vast majority of books on military history manage to pay lip service to this concept and

yet avoid making a serious study of it. Hundreds of books on strategy and tactics have been written for every one on logistics, and even the relatively few authors who have bothered to investigate this admittedly unexciting aspect of war have usually done so on the basis of a few preconceived ideas rather than on a careful examination of the evidence. This lack of regard is in spite--or perhaps because--of the fact that logistics make up as much as nine tenths of the business of war, and that the mathematical problems involved in calculating the movements and supply of armies are, to quote Napoleon, 'unworthy of a Leibnitz or a Newton.'²⁴

Most analysis of NATO's war plans do not look very deeply at the logistics of war as it might be fought against the Warsaw Pact, particularly on a fast moving battlefield.

Martin Van Creveld's conclusions about the practice of supplying war can be summarized in five key concepts:²⁵

1. Supply in the modern era is characterized by a system of continuous supply from base. The trend has been to carry greater loads at greater speeds. As modern, mobile armies developed and had to be fueled, fed and provided bullets they could not "live off the land."

2. As armies have gotten more mobile, it has become harder to provide them with timely supplies. Thus, maneuver units are tied to the supply base with umbilical cords which restrict them in attaining their theatrical speeds. Whether or not trucks, tracks and airplanes will allow armies to overcome the effects of mechanized warfare is a moot point.

3. The nature of what gets supplied the most has changed. Prior to WW II subsistence was the major factor. By the end of WW II it accounted for only 8 to 12 percent of all supplies. Now the demand is for ammunition, fuel, and repair parts.

4. The "critical distance" that modern armies can be ahead of their supply base, considering the factors of friction and need for continuous

quantities of supplies, will allow movement of no more than 40 miles per day at a sustained rate. This will remain essentially the same even if faster transport were available.

5. On the question of the proper support to combat ratio in modern combat, the author thinks there is no pat answer. However, he says that to think a low proportion equates to high efficiency is to misunderstand the relationship. The idea of proper support is not to make do with the smallest number possible but to produce the greatest possible fighting power. The optimum ratio is that one which accomplishes the operational mission. The general practice of modern armies is to do this on an ad hoc basis by making great efforts to gather together the largest possible number of vehicles, trucks, railroads, and etc., without any thought to the "ideal" combination. The ability to improvise usually determines the outcome of the contest.

These concepts taken together show the difficulty of supplying modern warfare with its consuming demand for the means of war. NATO's ability to meet these modern demands according to the concepts just described is certainly in question.

One set of authors who did do a detailed analysis of the logistical aspects of a war in NATO, Richard Lawrence and Jeffrey Record, concluded in 1974 that NATO needed to 1) increase the ratio of combat to support troops, 2) develop a multinational logistics command, 3) reduce the vulnerability of the stockpiles of equipment and ammunition, and 4) redirect the major lines of communication in Europe.²⁶ They concluded that NATO was not geared up to support a short war concept. In order to provide more for a short war concept they recommended: increasing the numbers

of small stockpiles in forward areas to be secured by the troops in place; increasing the reliance on the use of civilian assets to operate the LOCs and on the economy for resources; expanding the "throughput" of supplies from ports to forward areas; adopting a unit replacement system; reducing in-theater requirements for extensive medical facilities and support; and by reducing resources devoted to repair and evacuation of combat damaged equipment.²⁷

The authors further pointed out the disparity of logistics systems and policies among NATO allies in which each nation has differing stockage requirements. The United States, despite noted shortages still maintains as much as three times greater than the amounts stocked by our allies. Another deficiency was that at least 35 percent of US prepositioned equipments and war reserves could be destroyed by early air strikes which would encourage an enemy surprise attack. Still another deficiency was the vulnerability of the LOC from Bremerhaven, which the authors believe should be switched to the Benelux LOC as a hedge against a surprise attack.²⁸

In the last six years two of the four major recommendations of the authors have been implemented, the combat to support ratio in the US Army has been greatly increased to about 60 percent combat to 40 percent support (and 65 percent of all support is in the reserves), and the major LOC now will be through the Benelux. However, logistics is still a national responsibility and the stockpiles of equipment are as vulnerable as ever. Additionally, little has been done to push stockpiles forward and no unit replacement system is in sight, but considerable support is now counted on to be provided by Host Nation Support. Has all this change been for the better?

LTG (Ret) Joseph M. Heiser, Jr., doesn't think so. He thinks NATO can only have a credible deterrent and warfighting capability if each member of NATO achieves all the agreed upon NATO principles of logistics, not just those that are more accessible. He writes that the sole principle of logistics is a national responsibility presents a most serious constraint to a credible readiness posture. Alliance members have gradually reduced their capability to support a conventional war because of tightening economics. The combat to support ratios are now greatly dependent upon Host Nation Support, but that support can only supplement national military support; it cannot replace the fundamental capability needed in the combat zone and forward portions of the communications zone. He feels that an imbalance exists in the "tooth-to-tail" ratios which causes too much risk. He believes that in time of crisis the Benelux LOC will become a complex management problem that will severely strain the flow of logistics. He thinks that no one nation can support itself and that an integrated effort is necessary.²⁹

LTG Heiser proposes the following corrective actions be taken: 1) the optimum national military logistics capability must be achieved by each member; 2) professional logistic staffing in the alliance must be improved; 3) valid military logistic requirements for the member nations and the allied command must be determined and fully coordinated; 4) a continual assessment of the logistic readiness situation must be made by the member nations and the allied command to match resources to requirements; 5) these readiness assessments must include repetitive testing to assure readiness for war.³⁰

Writing a year later, LTG Heiser analyzed NATO's Long-Term Defense Program and called for full implementation and cooperation among member nations. This long term program was initiated in May 1977 to achieve a coalition of logistic efforts to overcome the fallacy that logistics is a national responsibility. It is designed to improve NATO's capability in air and sea defense, reserve mobilization, electronic and nuclear warfare, communications and control, readiness and reinforcement. A big order, that of itself shows the magnitude of the logistics problem of NATO. As this program is just getting started in NATO two questions come to mind: Will NATO be able to implement the program and when will it be an integrated logistics system? The second question is hard to answer.

LTG Heiser suggests eight obstacles to the first question: 1) Short-term national self interest can restrain the will to meet mutual needs; 2) a NATO staff of experts needs to be built to carry out the program; 3) consumer logistics has been given little attention by NATO; 4) within the alliance there is an underlying assumption that the United States and Canada would be the main sources of supply during war; 5) the more productive nations are reluctant to provide resources to a NATO pool because they fear the lesser nations will become too dependent; 6) there is not enough active support structure to insure proper support during war and a balance is needed between active, ready reserves and host nation support; 7) there is a tendency to support the less costly parts of the defense program which will render the integrated system ineffective; and, 8) there is no NATO forum for unrestrained presentations of military logistics requirements.³¹ LTG Heiser calls for the United States to take the lead in pushing for the implementation of this long-term program. He points out

that the United States Defense Department has implemented a new Logistics Master Plan for NATO which incorporates NATO's long-term program. An examination of the table of contents of this DOD LOG MAP (NATO) document shows there are 99 major tasks to be accomplished once again pointing up the magnitude of the task of improving logistics support.

After 31 years, NATO has finally organized to produce a comprehensive approach to supplying the battlefield. However, as the name of the program implies, it will be a long time before the results of these programs are felt in the front lines. If Martin Van Creveld is right and logistics is nine-tenths of the business of war then the magnitude of the improvements needed in NATO logistics suggests a "hollow" war plan to implement the forward defense. What is also evident is that the NATO logistic plans concentrate primarily on the material side of producer and consumer logistics, but have little to say about the historical lessons Martin Van Creveld has written about. It appears that NATO logistics analysis should also be concerned with how the material can be delivered at the right place at the right time on a highly mobile battlefield. For example, what are the plans for the use of helicopter transportation of supplies? What are the requirements for helicopter use and how many helicopter transport units are needed? Helicopters can go places that trains and trucks cannot go, doing it faster and through-putting it right to the unit locations. It seems to me that helicopter transport could insure that logistics support kept up with fast moving maneuver units on a mobile battlefield. They could probably extend the 40 miles per day "critical distance" another 20 to 30 miles. This method of transport would insure continuous support from a deeper base and meet the demands of larger consumption rates of fuel, parts and ammunition.

For the foreseeable future logistics will remain a national responsibility. It is difficult to obtain unclassified information on European nations' logistics postures except that they are not as prepared as the United States. Perhaps then a brief look at the United States readiness posture will suggest the overall situation. MOBEX 78, known as Exercise Nifty Nugget was a war mobilization exercise designed to test whether the United States could rapidly prepare itself for war in Europe. The results of Nifty Nugget turned out to be a sobering experience for military and governmental leaders alike. The Army alone identified 458 issues, many concerning resource constraints, which had a negative effect on its ability to mobilize and deploy to Europe.

John J. Fialka, who wrote a series of articles in the Washington Star newspaper on 2-4 November 1979, outlined the full range of deficiencies of America's lack of capability to support the NATO war plan. In April of this year he wrote a follow-up article in the Army magazine in which he pointed out that about one-half of the 458 Army issues were solved. The more difficult, resource constrained issues remain. In just 25 days of simulated mobilization, an Army of about 400,000 was sent to Europe with all of its most advanced high-technology equipment. But, as John Fialka points out it probably died there because it did not have enough shells, missiles, fuel, food, spare parts or replacements to survive at the high intensity level of modern warfare.³² LTG Eugene D'Ambrosio, recently retired deputy of DARCOM and a participant in the exercise, stated that the US Army ran out of its support within the first 30 days of fighting. LTG D'Ambrosio, also discovered early in the exercise that only 52 percent of the surface-to-air missiles (SAMs) were ready to fire. He stripped SAMs from later

deploying units to send over quickly only to discover the air force couldn't deliver them because the first 30 days of lift was already full up of critical needs.³³ John Fialka reports that the Army recently revealed to Senator Nunn that by M+90 it was only able to fill up 52 percent of its infantry manpower requirements. The figure for the artillery was 73 percent and for armor a mere 28 percent.³⁴ There was a tremendous strain placed on the 76 C-5A aircraft to surge to deliver the heavy unit equipment rapidly to Europe. The air force did not maintain enough spare parts to keep them flying and they were "literally" driven into the ground in the first 30 days. At least 30 percent of the air cargoes never got off the ground due to aircraft shortages. Logistics experts did not have enough time to assemble necessary shipping. The right types of ships in the right ports were hard to come by and some supplies were back logged. Several ports of the nations industrial mobilization base could no longer "surge" for war. Private munitions plants could not assist the government operated ones because they couldn't retool fast enough. Not one round of ammunition shipped arrived in Europe in the first 30 days. Only two foundries can make tank hulls and other large castings for surge purposes. Much of the nation's railroad system has disappeared complicating the movement of unit equipment and stocks by rail.³⁵

As reported in John Fialka's article the Nifty Nugget scenario called for 10 days of reaction before the Soviets launched their attack. One can imagine the additional strain and confusion placed on the CONUS base if the Soviet attack was a surprise attack or an attack after 48 hours of warning. It is beyond the scope of this study to do an in depth analysis of all of the logistics deficiencies "backing" up the NATO war plan.

Rather, what has been suggested in this section is that considering the importance of logistics to any plan of battle, the magnitude of the logistic shortfalls in planning and in implementation appear to be extensive. The need for a NATO Long-Term Defense Program and the lessons of Nifty Nugget put into serious question whether NATO is prepared to support a short, highly intense war. Not enough improvement has taken place since Richard Lawrence and Jeffrey Record pointed this fact out in 1974. This then brings into question the validity of risking the engagement of all your forces at the border if they cannot be properly and timely supported. If the nature of the war turns into a series of meeting engagements then Martin Van Creveld's five key factors of logistical support on the modern battlefield will be put to a serious test. There appear to be no NATO plans to cover logistics support in this more fluid, mobile environment of Soviet warfare deep inside the territory of the FRG. The supplying of modern warfare is too risky to be left to chance. The support of war also has a social dimension.

SOCIAL DIMENSION

This section will analyze the social aspects of NATO's war plans. Will the plans be supported by the governments, civilian populations and industries of the member nations both in peacetime and during war? This section will be brief, but concentrate on the national will and capacity to go to war. Why should the Soviet Union want to attack Western Europe? The first priority of social importance is to convince the people of Western Europe and the United States and Canada that the Soviet Union is a threat to NATO's survival.

Michael Howard has pointed out that military institutions are accepted by the great majority of the population of Western nations as a "disagreeable necessity," and it is left to governments to settle on their size and shape. Governments are effected more by short term economic and political pressures, rather than any deeper social patterns, when they limit the effectiveness of their militaries. Western democracies have free presses and openly elected representatives which assist their people in their demand for lower taxes, better schools, more easily accessible welfare systems and greater investments in industry. All of these demands are competing priorities to military needs. But as Howard points out, "the difficulties that we experience in creating a military effective defense posture in the West thus arise not from any moral deficiency in our societies but from precisely those characteristics in them that we wish to defend and that our adversaries would wish to eliminate."³⁶

So, how can Western democracies decide to increase their preparedness to go to war when the realities of competing needs for scarce resources are prevalent? Again, Michael Howard suggests that to a skeptical public opinion it is necessary to demonstrate a strong possibility that the Soviets intend to use their military strength to attack Western Europe. He postulates that Western peoples find it difficult to think of Russians as predators. But if they were predators an overwhelming case could be made for having well-equipped professional active armed forces to take the first Soviet attack, for well-trained and highly motivated reservists as backup, for disciplined guerrilla forces as stay behind forces and for a convincing system of civil defense against nuclear attack. He thinks the fact that these degree of forces have not been created, and that Western Europe is

still free, should not deceive the West into thinking that an attack might not happen. Perhaps the Soviets just haven't had a political objective. He rightfully observes that the "cold hostility" of the Soviet leadership to the West began right after the Second World War, and shows no sign of abating. It is a basic principle of Marxist-Leninist doctrine that where workers are defending against the forces of reaction, Soviet armed forces cannot be expected to sit idly by. He points out that, historically, Soviet expansion westward was for national defensive reasons and that the Soviets can not ultimately feel safe until all of Germany is controlled. With Germany under control the rest of Western Europe could be left alone in exchange for US withdrawal from Europe.³⁷ This has been the underlying truth behind the NATO alliance since its beginning. Recently in Afghanistan the Soviets once again demonstrated their predatory nature and they even "created" the "forces of reaction" as the basis for their expansionism. It is not inconceivable for them to "create" a situation in which they felt compelled to unite Western Germany with their brothers. When Hitler attacked his neighbors, it was simple to neutralize their military power to eliminate the threat. Michael Howard thinks this is the reason the Soviets would attack, to simply neutralize a potential threat to Russian security.³⁸

Is this argument convincing enough to cause the West's peoples to sacrifice enough to build the logistical power necessary to successfully defend Western Europe conventionally? This remains to be seen but Michael Howard again reminds us that:

If we do take account of the social dimension of strategy in the nuclear age, we are likely to include that Western leaders might find it much more difficult to initiate nuclear war than would their Soviet counterparts--and, more important, would be perceived by their adversaries as finding it more difficult. If this is

the case, and if on their side the conventional strength of the Soviet armed forces makes it unnecessary for their leaders to take such an initiative, the operational effectiveness of the armed forces of the West one more becomes a matter of major strategic importance, both in deterrence and defense.³⁹

In these words lies the answer to convincing the peoples of the West that a strong conventional defense of Western Europe is vitally important to them. If the Soviets were convinced NATO was reluctant to use nuclear weapons and that their conventional forces were superior to NATO's, then they could easily justify to themselves a conventional attack on the FRG would be in their best security interests because, if successful, it would probably mean the end of NATO and the long term preservation of their own society. This is a sobering enough argument to convince the peoples of the West that it is in their best security interests to insure the Soviets do not believe they have conventional superiority over NATO. The question of whether NATO would use nuclear weapons first I will leave to the opinion of the reader. It seems of paramount importance then that the governments of the Western democracies must inform their peoples of this argument so that public opinion is informed of all possible future risks. But, more importantly that sufficient resources must be allocated to the building of a stronger conventional defense for NATO to insure against the predatory nature of the Soviets. Protection of the democratic way of life for the West should be each member of NATO's most vital national interest. But, the public has to be informed to make this happen.

General Robert Close in his book, Europe Without Defense?, certainly tells the public of this danger to Western security. The social dimensions of his book are very revealing. Europe grew very content over the years under America's nuclear shield but this reassuring situation now belongs

to the past. Conventional forces have now regained their importance and the clear Soviet qualitative and quantitative improvements establishes a definite break in the balance of forces. This imbalance is only increased by the erosion of the West's will to defend and by clever propaganda aimed at encouraging this tendency by all possible means. He points out that detente has a soothing effect on Western public opinion and negates the sacrifice of the well-being and quality of life for unpopular security expenditures. He postulates that a major economic recession in Europe would release deep social currents and pave the way for regimes favorable to communism under the protection of the Soviet Union. The question is would this situation strengthen European cohesion or cause it to slide back to nationalism with each country having no concerns for its weaker partners? He reminds that the fragile democratic structures of Europe could be shaken by a major economic recession, particularly if accompanied by social disturbances, strikes, violence or general underemployment. He suggests that the blind pursuit of pacifism at all price, the constant reduction in the will and effort to defend and the tendency to not deal with long term defense matters over several more years could drive West Germany right into the hands of the Soviet Union.⁴⁰

The weaker NATO's defenses become, the greater the risk of a conflict the alliance is trying to avoid. In the last 10 years, General Close points out that Canada has reduced her forces in Europe by fifty percent; Belgium has reduced its combat brigades by a third and withdrawn half of what is left back to Belgium and is about to reduce its compulsory military service from twelve to six months; Denmark has considerably cut down its forces and its military service time; the FRG is reducing military service time from

eighteen to twelve months; Italy is appreciably reducing its defenses; the United Kingdom plans to make substantial savings in its defenses; the Netherlands has just proposed a massive reduction in its armed forces and the United States has some political pressure in the Senate to withdraw troops from Europe. All this has been done with no results in MBFR or SALT and the Soviets have made no reductions and have strengthened their forces in tanks, artillery and attack helicopters. This continuous erosion of Europe's defense potential, which will only get worse if present trends continue, will very likely lead Europe to the breaking point. General Close concludes that further conventional reductions will cause wider fronts to be defended by smaller units and the intervention distances to increase such that a coordinated conventional defense of Europe won't exist. The fragility of the Flexible Response strategy will then be apparent and the nuclear threshold will rise considerably bringing the possible end of Western civilization into sharper focus. He ends his social argument by saying it is not easy to draw a clear line between the requirements of security and the tendency of the Soviets towards expansionism.⁴¹ It would seem that General Close would have fewer uncertainties after Afghanistan.

T. R. Fehrenback doing a study of American unpreparedness for war entitled, This Kind of War, captures the essence of mobilizing America's will towards war:

The problem is not that Americans are soft but that they simply will not face what war is all about until they have had their teeth kicked in. They will not face the fact that the military professional, while some have ideas about society in general that are distorted and must be watched, still know better than anyone how a war is won.⁴²

Free societies from Sparta on have had a hard time in peacetime orienting toward the battlefield. Perhaps it will take another "kick in the teeth"

to wake up America and her NATO allies to the grave danger to freedom that the Soviet Union and her armed forces now pose, or perhaps the words of General Matthew Ridgeway, who knew how to win a war, could inspire us now as he did the men in Korea:

The real issues are whether the power of Western civilization, as God has permitted it to flower in our own beloved lands, shall defy and defeat communism; whether the rule of men who shoot their prisoners, enslave their citizens, and deride the dignity of men, shall displace the role of those to whom the individual and his individual rights are sacred; whether we are to survive with God's hand to guide and lead us, or to perish in the dead existence of a Godless world.⁴³

The fact that NATO must be prepared to "defeat communism" is as valid today as it was in Korea; only today the armed forces of the Warsaw Pact, lead by the Soviet Union, are far more powerful than the North Koreans. The NATO nations have to generate the collective will to build the degree of conventional defense necessary to preserve their way of life. It's as simple as that. If the NATO nations could recognize the defense responsibilities they have to their citizens and societies, there are four areas in the social sector where immediate improvements are necessary. I will briefly mention each.

First, America lags behind the other NATO members in providing manpower to her armed services. All other NATO nations have a compulsory system. Granted each nation has reduced the compulsory nature to some degree in the last 10 years but, in time of emergency they can quickly restore it to full strength. In America's case, without an active selective service system or at least a registration system, Americans will have to fight a short war in NATO with the personnel on hand and in the IRR. It would take about 185 days to produce the first soldier in battle after call-up.

Current active Army shortfalls are 15,000 to authorized end strength and 56,000 additional to wartime manning levels. Current Reserve Component shortfalls are 175,000 short of wartime manning levels. Current IRR strength is about 200,000 with a 70% show rate. Anticipated casualties for 90 days of war in Europe could reach 130,000. The Selective Service System is in "deep standby." Therefore, the current mobilization manpower problem for the Army is the need for 362,500 replacements through D+90 with the prospects of receiving only 140,000 or only 39% of needs.⁴⁴ An Army without sufficient manpower for war is indeed a "hollow" Army.

Second, without real growth in the Defense budget resource shortfalls to cover the deficiencies noted in exercise Nifty Nugget will not permit the Army to be rapidly deployed to Europe in time to effect a short war attack. R. James Wookey writing in the editorial section of the Washington Post of April 14, 1980 pointed out that the Soviets annually spend \$60 billion more on the military than we do. This is more than double the percent of GNP that we spend. US real growth is eaten up by inflation while the Soviets is real growth. In the decade of the 70's the Soviets spent nearly a third of a trillion dollars over what we spent on defense. This fact alone is the biggest reason why the Soviets have four times as many tanks as NATO and have equalled the West in the quality of their Armed Forces. America and the other members of NATO must increase their allocations of defense dollars in real terms for several years to come to correct the current resource shortfalls of NATO's armed forces.

Third, the industrial mobilization capability of America is totally unprepared to support a major war in Europe and the Europeans are depending on our supplies. A recent AUSA Special Report outlined many of the major deficiencies as did the Nifty Nugget exercise. Industrial potential,

surge capability and sustainability are critical elements of strategic deterrence and war fighting capability. Planning agreements between the Defense Department and industry are outdated. The transportation system for rails, ports and airheads needs vast improvements. CONUS war reserve stockpiles have been reduced without replenishment. Soviet production rates since 1973 for most major items have far outstripped those of the combined US/NATO alliance. Each year Soviet production has averaged 2700 tanks versus 450 for the US; 5,000 personnel carriers versus 1,500 for the US; 1,400 artillery pieces versus 160 for the US; and 1,000 tactical aircraft versus 600 for the US. The NATO allies have not contributed sufficiently to close the gap. The Soviets keep their production base "warm" all the time.⁴⁵ Many DOD plants and other industrial plants have gone to multiple shifts just to meet peacetime needs. This eliminates the planned shifts for mobilization and reduces reserve capacity from about 50% to only 8-16%.⁴⁶ By far the most difficult problem is the age of the Army's industrial plant equipment. As of 1977, 41% of all metal-cutting and metal-forming tools in the Army inventory had exceeded their useful service life; by 1982 70% will have reached that point. Another area is overdue maintenance of plants which is approximately \$40 million to correct. Lastly, many of the Nifty Nugget problems concerning the responsiveness of the industrial base were the results of fragmented planning efforts by defense industrial planners.⁴⁷ In a February 10, 1980 article in the Washington Post on "Why the US Can't Rearm Fast," it was pointed out that severe constraints exist in the aircraft business: only three suppliers exist for large forgings and castings; due to a shortage of bearings some aircraft will be built without engines; spindle time on machinery is short for the big, complex parts used in airframes and new

tools carry long delivery times; a growing shortage of integrated circuits is slowing the production of electronic systems; titanium, cobalt and chromium are all in critically tight supply; and competition is already fierce for engineers, technicians and skilled labor. Lastly, delivery times on such items as batteries, bearings, hydraulic pumps, ejection seats, engines, landing gears and transmissions run anywhere from eight to thirty-eight months. Somehow America needs to achieve a industrial capacity to meet faster peacetime needs and the surge demands of war. However, the message we now convey to the Soviets with our present state of unpreparedness is one of indecision and weakness. This same message is conveyed to our NATO allies.

Fourth, the territorial defense capability within the FRG raises many questions. The West German territorial army includes 64,000 active army personnel and has the area support function (transportation, signal units, construction engineers, CBR defense units, etc.). In this role it supports both the West German field forces and other NATO forces in Germany. We look to these units for some host nation support. It is intended to provide rear area security against infiltration, sabotage and air landed forces. For this purpose it includes six home defense groups each roughly equal to a large infantry brigade, composed of four truck mounted infantry battalions, two heavy motor companies and two tank destroyer companies. These groups will be augmented by reserves in war.⁴⁸ LTC Moorad Mooradian writes that these home defense groups are mostly equipment holding units at cadre strength requiring time for mobilization to reach combat readiness. He cautions that US forces should count on a slack period before they can function and that their missions are not to protect friendly forces

or installations. He further cautions that US forces have no active rear area operation centers (RAOCs) to control rear area security and that they wouldn't be available for a short war attack. He concludes the whole question of how to best provide rear area security needs extensive review.⁴⁹ LTC Norbert Hannig writes that if a short war attack occurred, the civilian population of the border areas and even the rear areas would be requested to stay at home and bear its own share of the death toll which could run into the millions. He states this kind of territorial defense is equivalent to suicide or rather mass murder of unarmed civilians. Under these circumstances he calls for a mass evacuation plan of all civilians in a very short time and the creation of extensive militia units all over the FRG to be armed with light anti-tank weapons. The militia would fight the Soviets until the main forces arrive to enable the civilian population to evacuate. Once the main forces arrive the militia goes to work for them and primarily provide rear area security.⁵⁰ Since the FRG can see no alternative to the forward defense of the border area, it seems only reasonable that it provide evacuation plans for the thirty percent of her population that lives within 100 kilometers of the border; twenty-five percent of the FRG's industry is also located in this zone.⁵¹ LTC Hannig's proposal seems valid in light of the current disposition of forces, the threat of a short war attack and the lack of much capability to provide rear area security. The evacuation of this zone would also provide the main force units moving to the border more maneuver room to confront the strategy of meeting engagements of the Warsaw Pact. The evacuation would also lessen the opportunity for the Soviets to group a large hostage force for post-war negotiations.

The social dimension of war is very important and directly effects the capability to provide the logistics of war, which as we have seen

make up nine-tenths of the effort. This section has only hinted at the extensiveness of this important dimension. But if Napoleon was right that the moral (social) is to the physical in war as three is to one, then much more attention should be being paid to these social aspects of war. General Robert Close agrees with this as he says that the very basis of NATO's weakness lies in the absence of political will. He ponders that the task is not insurmountable but which political leader will go down in history as having taken up the challenge. He ends on this note:

Two worlds are facing each other: that of the "Gulag Archipelago" and that of freedom. Pray God that we may still have the possibility of making our choice and that our future will not depend on the plans of the Stavka and on the unforeseeable results of events which might take place on 'that Sunday.' 52

The last strategic dimension of analysis of Michael Howard is the technological one. The paper will now address this subject.

TECHNOLOGICAL DIMENSION

This section will analyze the technological developments in major conventional weapons and support systems that are essential to ground combat in the execution of NATO's war plan. It will also discuss how technology should and shouldn't be used on the modern battlefield. Michael Howard reminds us the belief that technology has somehow eliminated the need for operational effectiveness is no more valid now than it was in World War II. One can't simply push a button and expect the machine to do all the work. Rather, technology will make its greatest contribution to strategy by improving weapons systems and logistical systems to support the fundamentals of warfare. The new weapons systems will allow the operational skills of the soldier to once again be the dominant factor on the battlefield.⁵³

General DePuy agreed with this point in a recent Army War College lecture when he said despite the fact the Army of today is a high technology Army, the Infantryman on the battlefield is still "the soul of the Army." He pointed out that technology affected the Army in many ways: it presented training problems of adoption to the new system; it changed the configuration of equipment which causes new techniques of usage to be envisioned; it affected the quality of performance to establish a new learning curve; it tested low level leaders to make the new machines work on the battlefield and it affected the administration and logistics of the new systems. He stressed that performance was the key to judging the utility of the new technology.

In discussing military doctrine and new technology, Steve Canby makes the point that in conventional warfare a new weapons system usually gives only a temporary advantage as the enemy soon learns to cope with the technological change. He points out that in America new technology has often been seen as the panacea for warfare. This has lead us into the trap that quality can overcome quantity. He clearly states that NATO has similarly sought technological solutions to its conventional inferiority, but none has yet appeared. Therefore, the full benefits from new technologies have not been materializing. He adds the three most significant technologies for NATO forces have been tactical nuclear weapons, the helicopter and precision-guided munitions (PGMs). Then he proceeds to show that these systems have been more than matched by the Soviet Union. The use of helicopters have not been completely settled for NATO yet. Canby thinks they can be used for carrying infantry units for small-scale raiding, for quick reinforcement of threatened areas, and for carrying

small anti-tank or road blocking groups. He questions their use for larger scaled operations, particularly near the border because of vulnerability.⁵⁴ He doesn't mention the anti-tank attack helicopter which has been proven effective on many large scale NATO exercises when it is used in a combined arms team. He also fails to point out how helicopters could be extensively used to transport logistics as discussed earlier in this chapter.

Canby says that PGMs have been acclaimed as one way to compensate for NATO's inferiority, but he predicts that the Soviets will adjust to these in some way. And they have by the use of a short warning attack which precludes setting and fortifying the defenses. Basically, he points out that NATO's military philosophy has called for high investment-low attrition forces while the Soviets have opted for low investment-high attrition forces.⁵⁵ While this is true the superiority of Soviet forces as designed for a conventional blitzkrieg attack could suffer great attrition and still have sufficient forces to fight. But, in a short warning attack where they would not suffer undue attrition, their superiority of forces would be even more difficult to stop. More on PGMs later in this section.

Steve Canby's critique really is that the new technology is not being properly used. He asserts the new technology is simply being used to improve existing operating practices rather than seeking new ways to use the full advantages of the systems. New technologies should be viewed as releasing the constraints on current operating practices. NATO's thinking on technology has been too dominated by the quantity-quality tradeoff particularly when the Soviet Union is a high technology country itself despite the fact that it imitates western technology.⁵⁶ This is an area where NATO does need to take a critical view of how it intends to blend all of the new technology, both air and ground, together to implement the

strategy of forward defense. For example, the trend in technology for the last ten years and certainly the next five years has been to produce systems which move faster, shoot farther and more accurately and can communicate over greater distances. This trend alone would suggest their employment on a mobile battlefield to take "full advantage" of their capabilities. But, the forward defense principle calls for a linear defense posture with only limited movement of forces locally.

Two authors, Palmer Osborn and William Bowen have used their imaginations and come up with what they call the "nutcracker" strategy. They think the enemy can be crushed between two types of firepower. One class consists of area munitions to destroy many vehicles at once and the other class consists of munitions to destroy individual vehicles one at a time. They would use modern sensors to locate groups of vehicles. If these vehicles are close together then strike them with area munition; if spread out then hit them with point munition. For the area munition they propose emplaced or scatterable minefields and artillery, conventional or small nuclear rounds. For the point munition they propose dragons, TOWs and the creation of "PGM dune buggies" to carry them on. The maverick missile could also be used in this role. They, of course, would like LTC Hannig greatly expand the use of militia and territorial forces to use the point type munitions. The "PGM dune buggy" really stands for a light, fast moving vehicle which could even be a jeep. The idea is to greatly expand the numbers of these systems and have a defense in depth system of employment.⁵⁷ This concept uses far fetched terms but gets at the principle of using the evolving fluidity of warfare and technical capabilities of modern weapons together in an operational concept. One can certainly agree with the use of mines to breakup enemy formations and we do plan to use the dragons and TOWs on

mounted vehicles and the maverick missile against tanks. What this concept also points out is that a defense in depth is possible with new anti-tank technology if NATO can come to grips with its extensive use by other than main force units.

As soon as the new infantry fighting vehicle gets into the inventory to work with the new XM-1 tank this combined arms team will be the most mobile combination of firepower and maneuver we have known. This combination of armor and infantry can be brought to bear quickly on the battlefield providing it has space to operate in and is allowed to be mobile. Our current fixation on a linear defense of the border of the FRG does not offer the space needed for this team, particularly if you add mobile artillery to the team. In the US corps sectors the border regions are fairly densely vegetated terrain cut up by numerous mountain ranges and ridges. Movement in this terrain is greatly restricted and cross-compartmented and often limited to roads. This terrain affords most effective tank shots between 800-1200 meters. In fact, in most places these shots are restricted even further by folds in the ground, heavy vegetation, man-made obstacles (telephone wires, etc.) and time of flight and line of sight of the projectile or anti-tank missile. For example, a TOW gunner engaging a target at 1200 meters might have only a few seconds window to get the missile to the target before it goes into another fold in the ground or into trees or behind a building. Some terrain is so restrictive that this may be the gunner's only shot if his defensive position is fixed. If he moves at this separation range he may be detected by the enemy. Once he shoots, he must immediately move to keep from being fired upon. Needless to say, in a linear defensive arrangement the kill zones for enemy tanks have to be very care-

fully planned to make the first shot count. However, if the enemy doesn't come into your kill zone your firepower can be wasted.

The point here is that as the new tank-infantry team comes into the Army's units we must insure not to restrict their mobile capability. While the Army as a whole is composed of many components, all necessary for the conduct of battle, the combined arms team of the tank and the infantry are the core of NATO's defense. Their modern anti-tank capability can not be degraded one bit if we expect to conduct a successful conventional defense of NATO. They alone are the linchpin of modern battle because they can move and see what they are shooting at. The more angles, ranges, and positions we can give them to do this from the better.

LTG David E. Ott points out the fact that the enemy on a modern battlefield is simply a group of targets. These targets can be arrayed in different patterns and in different dimensions in varying terrain, but they must be engaged and fired upon and killed at a high rate. He points out that the artillery, backing up the tanks and infantry, must also be prepared to use their mobility. He points out that artillery battery positions are no longer "safe" in the rear and must be as mobile on the modern battlefield as the tanks and infantry. To do this he proposes to do away with the firing battery position and let each individual piece occupy its own position within a battery area of responsibility. Each artillery cannon will move independently, fire a mission and move again. He sees this as necessary because of the devastating counter-battery fire available to the Soviets and of the means to locate battery positions. Battery positions are vulnerable because they can't be completely hardened and aiming cycles must be set up and crews are usually outside the armor protection much of the time and they can be located by any one of several means--radar, sound and sensors. This vulnerability was mainly why batteries were recently reorganized into two four-gun platoons. He points out the difficult

part of the concept is to get responsive, massed fires from the moving cannons. He suggests all the new technology is available now except for achieving a burst rate of fire. Each piece needs to be semi-autonomous and to have an inertial land navigation device, a north-seeking gyro and an on-board computer. He proposes a small, rugged microprocessor for the technical fire control of each piece. Division and battery FDC's operate as before and pass missions to each cannon. The size of each battery area would be around 5,000 by 3,000 meters for plenty of movement room.⁵⁸ Here is an imaginative application of changing your operational concepts to match your technological capabilities and preserve more of your force in the application.

LTG Ott also points out that:

A heavy enemy cannonade on our front line defenses will drastically reduce the effectiveness of our direct fire anti-tank weapons, to include the effectiveness of our tanks. A cannonade introduces lethal fragments, smoke and shock, all very detrimental to our effectiveness, just as our cannonade cuts down on enemy effectiveness.⁵⁹

Just as the artillery needs to shoot and move so must the armor and infantry shoot and move, particularly to avoid enemy fire. As this principle applies to individual or small groups of forces so does it apply to the entire forward defensive belt. Fixed positions near the border will receive as much as two hours of cannonade fire before any deliberate Warsaw Pact attack. It is very difficult and time consuming to provide even partially covered positions for tanks and APC's. The NATO forces are at great risk setting at the border absorbing the artillery preparations even before the assault begins. Our mobility can help us avoid the brunt of this artillery assault if we will only plan to use it. This particular problem will not be as great in a short warning attack where meeting engagements take place all

across the frontier territory of the FRG. If NATO chooses the time and place to do battle with the main Pact attacks our ability to avoid Pact artillery would be even greater. Needless to say, LTG Ott's mobile artillery concept would greatly complement any plans to give the same freedom of action to the tanks and infantry. More on this in the final chapter.

Major Floyd U. Churchill has examined the employment of artillery in the "active defense" of the border region of the FRG and concludes the FA is tasked to execute missions that are beyond its physical and logistical capabilities. He says many missions were established without regard to the current state of technology and the European battlefield dynamics. He points out that a great many of the artillery's 21 tasks of the active defense will be competing for scarce resources in the most intense moments of battle. Further, the units to provide the fire will also be repositioning and resupplying. These demands would also complicate LTG Ott's concept. After analyzing the intensity of the modern battlefield and the nature of Pact formations and tactics, Major Churchill identifies 10 major areas in which the employment of artillery needs improving. Among these he points out that artillery will not be that effective against the fast moving, lead elements of the first echelon; the limited amounts of artillery makes it impossible to handle all assigned missions; the targets best suited to artillery are located 2 to 8 kilometers behind the leading elements; the current acquisition system is not adequate to service all targets, particularly the deeper ones; and artillery cannot afford to fire early at rapid rates because of the risks of detection. He concludes that the present concepts will cause large amounts of limited artillery weapons and ammunition resources to be expended against the wrong targets (lead elements), and as a consequence inadequate artillery will be available to gain control

of the tempo and direction of the battle from the attacking force.⁶⁰ Having illustrated a few of the technological challenges to our main defensive forces--the tanks, infantry and artillery, I will just briefly mention how technology is affecting other aspects of the support rendered to these main forces.

The role of light infantry is always in question. Light infantry certainly meets the first test of a NATO war--it can be deployed more rapidly. It could initially then be used to secure airfields or key installations for the arrival of the heavier divisions. If helicopter transportation is available it could be deployed into the battlefield to provide depth to the defenses in more rugged terrain or to be employed in key built-up areas or to be given a territorial rear area security mission. There are numerous missions in NATO for light infantry if their use is planned for and integrated into the war plan. If more mobile units run short of fuel, light infantry could be used to help out by providing strongpoints of defense. What type of technology and how to organize light infantry remain questions to be solved by the Division 86 Study.

The Warsaw Pact's capability to use chemical warfare is extensive and could be the achilles heel of NATO's forward defenses. LTC Gary Eifried points out that in Soviet doctrine chemical weapons have moved from the special category to that of conventional ones. He explains the Pact is prepared to use chemicals in the initial attacks or hold them for later use if their breakthrough attacks bog down.

The key point is that chemical weapons are extensive in the Soviet inventory. There are chemical warheads available for mortars, field guns, multiple rocket launchers, surface-to-surface missiles and in bombs. Estimates are that up to 30 percent of the FROG rockets and SCUD missile

warheads are chemical as are 20 percent of the artillery rounds. The total quantity of chemical agents held by the Soviets is approximately 350,000 tons contrasted to 42,000 tons in the US stockpiles.⁶¹ A major delivery system is the 20 kilometer range 122mm BM-21 multiple rocket launcher. This weapon can fire 40 chemical rounds in 40 seconds and blanket a company sized defensive position with 400 lbs. of toxic chemicals. There are 18 of these delivery systems in a Soviet division which can fire 720 rounds over a wide sector of the front in just 40 seconds and they can be reloaded in 10 minutes. This attack can be backed up by a Soviet division's 54 to 60 122mm and 152mm field guns, which fire both nerve and blister agents. FROG rockets back these up and carry 700 pounds of agent, while SCUD missiles hold 2,000 pounds of chemicals; both allow the Soviets to fire at deeper targets also.⁶² The routine use of chemicals, as they practice for in training, by the Soviets would force NATO troops to operate for days under full chemical protection, which reduces efficiency considerably. The medical system already is overburdened handling normal casualties; if chemical casualties were added it is doubtful they could handle the situation. The new chemical companies being integrated into divisions in Europe are a step in the right direction but until we have chemical facilities adequate to handle protection detection and decontamination at the battalion level the US Army's combat units will not have sufficient capability to maintain their combat effectiveness. In the heat of the forward defense battles senior commanders can ill afford to pull whole battalions out of the defenses to decontaminate at a rearward area. The Bundeswehr's combat units have decontamination units at the battalion level for these very reasons.

Electronic warfare is another area where NATO forces are still catching up to the Soviets. Soviet doctrine in radio-electronic warfare (REW) fully

recognizes that radio-electronic combat (REC) is primarily an offensive and defensive tool. The Soviets practice REC in all their training and exercises. As Major Barney Slayton points out whereas US doctrine primarily uses EW to collect data for decisionmaking, the Soviets primarily use it for massive destruction, but also use it for eavesdropping. As an offensive tactic the Soviets emphasize the identification, location, and destruction of at least half of the opponent's electronic emitters by indirect fires of artillery, multiple rockets or even FROGs. Of course, most of these emitters are near our command posts. The Soviets will also use this medium to conduct deception operations. MAJ Barney points out the extensive uses of false radio nets in Soviet training.⁶³ The Soviets are well organized from Front level down to battalion level to conduct REC operations with both ground and airborne capability. The Soviet concept of REW tactics is threefold: 1) it involves denying the enemy information which jeopardizes troop control; 2) it envisions massive application of firepower to electronically derived target acquisition information to butcher the enemy's command and control systems; and 3) it involves the elusive areas of deception, secrecy and surprise. MAJ Barney points out for the Soviets REW is not a concept apart; it threads its way into the fiber of day-to-day operations and will be integrated into all tactical plans.⁶⁴ He rightfully concludes that NATO must be prepared for REW because:

The brutal consequences of electronic warfare, including deception, are no longer hidden away somewhere in a rear echelon headquarters. On a future (NATO) battlefield, the 'War in the ether' will actively be fought by maneuver units. Staff officers and commanders from battalion up must be aware of the intricacies and lethality of the modern electronic conflict. The 1973 Arab-Israeli War, a conflict of surrogates, demonstrated this clearly.⁶⁵

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The controversy about the effectiveness of anti-tank precision-guided munitions for the defense of NATO goes on. LTC Wolfgang Samuel writing in Parameters acknowledges a substantial group of writers suggests strongly that the kind of destructiveness and confusion of war witnessed in WW II is a thing of the past because of the high accuracy of PGMs. They believe that precision technology may allow carefully controlled combat that reverses past trends of targeting nonmilitary facilities. He further points out that tactical PGMs in all of their various forms are a potentially decisive force on the battlefield when integrated with the right kinds and numbers of unguided bomb and other missiles and gun fired projectiles.⁶⁶ John J. Mearsheimer is a believer in PGMs. His main conclusion is that the revolution in precision-guided technologies will make it very difficult for the Soviets to implement a blitzkrieg strategy. He claims the proliferation of these weapons causes the offense to increase the mass of his attacking force by placing heavy reliance on artillery, SAM, air defense guns and mechanized infantry. The tank-dominated offensive has no place on the modern battlefield. The new emphasis on the combined arms operations creates severe logistical problems which will rob the blitzkrieg of mobility and speed.⁶⁷

LTC Ray M. Franklin sees the application of PGM technology increasing the role of the infantry in NATO. His main theme is that PGMs will lend to substantial increases of small unit infantry combat power relative to larger, more expensive, and vulnerable battlefield systems. He points out the anti-tank weapons--DRAGON, TOW and LAW--are good weapons but their primary problem is crew survival. There are two things to be done to improve this situation: 1) reduce exposure time after the launch signature, and this could be done by a laser beam rider; and 2) have a true fire-and-forget capability and this is a goal for the future. He postulates that if defended

forces could "look over the hills" from rear slope defenses and acquire targets and employ PGMs a wide range of options for the defense would open up. He thinks the future holds the use of millimeter wave radars on the FLIR or the CO₂ laser radar or even guided mortar rounds or, lastly, a target acquisition sensor in the sky over the battlefield.⁶⁸

On the other side of the ledger, Ori Even-Tov points out the estimated 130 Israeli tanks killed by anti-tank missiles must be seen in a broader context. These tanks destroyed by PGMs represented only some 15 percent of the 840 Israeli tanks lost in the 1973 war. He points out also the Arabs lost 1,330 tanks; all to conventional weapons. About 80% of the Israeli losses from the saggers came during the first five days of the war, when their use constituted a tactical surprise to the Israeli tank crews.⁶⁹ I might add during these first few days the Israeli's were not using sound combined arms tactics which left tanks more vulnerable to PGMs. Ori Even-Tov suggests the unusually high kill probability attributed to PGMs from an erroneous evaluation of the battlefield utility of these weapons and a misreading of the performance data. He flatly states the assumption that PGMs have a unusually high kill rate under battle conditions is wrong: no weapon has the same battlefield value as that advertised by the manufacturer or as demonstrated on the test range.⁷⁰ He concludes that an examination of Soviet military doctrine shows that a Soviet attack will hardly be blunted by a defense of PGMs. This doctrine advocates a "modified blitz" (as was shown in Chapter II) where several breakthroughs are attempted at selected points with an overwhelming ratio of forces. The rest of the forces conduct holding operations on a broad front to prevent NATO concentration at the main attacks. Main attacks are concentrated during feigned maneuvers or under cover of night or bad weather. The breakthrough points are shock points where

massed firepower is concentrated ahead of the attacking forces. He says under these conditions, characterized by heavy artillery fire and smoke, the hit probability of a man-operated ATGM is far lower than 90% stated in the Army's weapons manuals.⁷¹

Robert Kennedy adds depth to this argument of defending NATO with too much reliance on ATGMs by pointing out six drawbacks:⁷²

1. First, the Soviets have a substantial arsenal of ATGMs which can be used effectively against NATO's counterattacks or local "active" defenses. The Soviets will use them extensively on all their holding operations.

2. The terrain features of NATO's border regions provide the Soviets with a terrain mask. The hills, forests, villages and vegetation serve to break the field of fire/line of sight necessary for ATGM crews to be effective. He points out if an ATGM attacks a target at 3,000 meters the missile flight is about 15 seconds. If the gunner acquires and fires in 20 seconds at a tank moving toward him at a rate of 8 mph, the tank must remain exposed for 126 meters for the ATGM to score a hit. The probability of a tank remaining exposed for 126 meters is only .35 on the North German Plain and only .64 in the Fulda region.

3. Using urban sprawls for antiarmor defenses might not meet with NATO's approval as they wish to save their cities from destruction. Built-up areas also offer well-developed road networks and much protection to the enemy if NATO chose to defend the urban areas.

4. The current family of ATGMs are not immune to jamming or confuse tracking or guidance equipment. Smoke and camouflage can obscure a gunner's eye as can chemicals. Lasers can "blind" electro-optical guidance systems as can white flairs defeat infrared sensors. There is ample evidence the Soviets are developing countermeasures.

5. New forms of armor protection such as "chobham" armor now on the improved version of the British Chieftan tank and the new XM-1 tank. This technique would cost the Soviets plenty however as most of their tanks have obsolete forms of armor.

6. Finally, Soviet tactics may offset a number of ATGM advantages. One option would be to use nuclear weapons prior to the attack to neutralize the ATGMs. A second option is the use of artillery in the suppressive role to pin down the ATGMs as maneuver takes place. A third option is the surprise or maneuver option which would not allow the ATGM defenses to be set.

These arguments have shown that precision-guided munitions have their place on the battlefields but they are not the "saviors" of the forward defense. They must be integrated into the combined arms team and used as appropriate when the opportunity presents itself in battle. Right now, and for the foreseeable future, the crews are still highly vulnerable to the terrain, the visibility, the man-made features and the enemy tactics.

There are three more technological developments worthy of brief mention at this point because they do hold much promise for the future of warfare in NATO, particularly for maneuver warfare. The Army's new combat electronic warfare intelligence (CEWI) units will integrate combat intelligence and electronic warfare into a single combat multiplier for divisions and corps. These units will prepare the US Army for the modern REW of the Soviets. But, for the long term CEWI is a multibillion dollar program which requires highly trained and skilled personnel, certain combat development and service school integration.⁷³ Likewise, the Global Positioning System (GPS) of 24 navigation satellites will provide precise location to military units on the ground to within 30 feet. Right now this system is in the concept validation stage and will cost \$10,000 to \$30,000 for each receiver alone.

This system is a long way off but will replace a variety of current systems from nodirectional beacons to long-range navigational systems.⁷⁴ Lastly, the Combined Arms Center at Ft. Leavenworth has developed a new system called Battlefield Visualization Graphics (BVG) which uses computer simulation to portray portions of the battlefield as it exists to the viewer. By computer graphics terrain analysis, scenario development, computer model results and analysis of field test data is greatly improved. Right now this system has only training applications but someday it might be able for adoption to battalion TOC's for the commander to view the battlefield.⁷⁵

This brief review of the technological dimensions of strategy has shown that Michael Howard's view of operational skills, instead of technology, being the dominant factor in any future war in NATO is true. The belief that technology has somehow eliminated the need for operational effectiveness is mistaken. As warfare has shown time and again the human element always has to adapt the technology to the battlefield circumstances to make it effective; its not the other way around. The current developments in technology have found their places on the modern battlefield but have made no radical changes to the evolution of ground tactics. They have greatly increased the capability of military forces to move more rapidly and shoot more accurately, providing the effects of terrain, weather, man-made features and enemy tactics and capabilities can be orchestrated to bring out the most effectiveness in the technological system employed. It still takes soldiers, leaders, sound strategy and tactics to do this. But, the need for increased operational effectiveness is very apparent when facing the forces of the Warsaw Pact because they are "high" technology armed forces who have clearly integrated all forms of modern warfare into their doctrine and practices. And NATO has not yet done this.

The Tank-Infantry-Artillery combined arms team is still waiting to be "turned loose" on the battlefield to demonstrate its combined maneuver and firepower potential, especially when TACAIR and anti-tank helicopters augment the team. This potent package should be fighting maneuver warfare on a mobile battlefield that affords some degree of depth where NATO can strike the enemy at places and opportunities of its choosing; not the Pact's. The NATO armed forces and the industries of their respective countries have provided a highly technological combination of forces who can move rapidly on the battlefield. The best that NATO planners can do with them is line them up on the border "toe-to-toe" in what promises to be the greatest "mad minute" in the history of warfare. Unfortunately, the battle will last longer than one minute. The Army Chief-of-Staff, General Meyer, now characterizes this battle as a "three-day" war--the day before the war, the day of the war and the day after the war. The NATO planners need to give deeper thought to the operational strategy given to implement the strategic principle of the forward defense to insure they plan to use modern technology to its best advantage against the numerically superior Pact forces. Otherwise, a bloody mess may occur on the second day of the war which may eliminate the occurrence of the third day for Western civilization.

The current Warsaw Pact advantages in chemical and electronic warfare could "radically" change the tactics of the battlefield, not through modern technology, but because NATO is simply behind the state of the art. NATO needs to modernize its defenses against both of these tactical methods or it may not have the opportunity to employ its more conventional means of engaging the Pact forces. I might add here that a more mobile concept of defense would, of itself, afford the defenders more protection against

either of these tactical methods. A mobile defense in depth would also complicate Soviet targeting for use of nuclear weapons. In summary, NATO needs to insure that

it is adjusting its operational concepts to make the best out of its modern technology. To do it the other way around could spell defeat.

SUMMARY OF FINDINGS

This chapter has plowed through much fertile ground over which the defense of NATO would be conducted. The plowing has been difficult because the ground is so hard to cut through. This, in my opinion, is exactly why strategic, operational and tactical implications on the defense of NATO are hard to make clear. Michael Howard's formula of the four dimensions of strategy help to make these implications clearer. Deploying and using conventional armed forces in battle to attain a given political objective is not simply the matter of an operations concept and plan. The war plan, to be operationally effective, must be capable of supplying the forces in battle, of creating and employing the technology to its fullest extent and of generating a genuine popular commitment for its support and undertaking. Any plan is only as good as the physical, material and spiritual capabilities backing it up. A plan without these capabilities and the creative use of them should be changed and then adjusted as the capabilities increase. As Michael Howard aptly puts it: no successful strategy can be formulated that does not take account of the operational, logistical, social and technological dimensions of modern warfare.

Analysis of the operational dimension shows that as nuclear parity was accepted by both sides, the conventional defenses were moved Eastward to the border. The defending forces are to be disposed in linear arrangements along the 1,000 kilometer front in eight corps sectors with divisions abreast. The number of NATO divisions are inadequate to provide either a cohesive forward defense or reserves. Ninety-six divisions were envisioned

to do the job now done by 28. The depth of the defense limits room for maneuver and affords the Pact the opportunity to engage all main forces simultaneously, if they choose. The covering forces are actually defenders and are thinly spread and require timely reinforcements. Timely reinforcements are not available for either the covering forces or the main forces in a short warning attack scenario. Lateral reinforcements won't be available due to terrain restrictions and enemy holding actions. The Warsaw Pact has the strategic and tactical initiative and can attack conventionally using one of two strategies. A preemptive attack will cause meeting engagements to occur deep inside the FRG for which NATO has no contingency plans or doctrine. The Pact can let the defenses be set, concentrate their main attacks with 6:1 force ratios or better at several vulnerable points and conduct breakthrough operations deep into the territory of the FRG. In either case, NATO forces will be hard pressed to react in a timely manner to concentrate force ratios sufficient to defeat the enemy at the points of the main attacks. In all likelihood NATO forces will be forced to trade space for enemy identification, delay and attrition. Where the battle lines might stabilize is difficult to estimate, but NATO's political objective will not be obtained. Absence of NATO doctrine or contingency plans for the conduct of large unit meeting engagements in depth within the FRG will cause great confusion in the conduct of the battles and their supportability. The battlefield requirements to see deep, concentrate forces and react in a timely manner will be severely hampered. The mobilization of European reserves and reinforcements from the United States will not appreciably alter the enemy force ratios in the first 30 days of the war and will not even begin to contribute until after D+10. None of the evidence

available contradicts the arguments of Justin Galen and the twelve major deficiencies he points out that exist in the current operational strategy for the forward defense. Lastly, the active defense doctrine is designed for the conduct of defensive tactics close to the border; it is not an operational strategy for the defense in depth of NATO.

Analysis of the logistical dimension shows that the supportability of a conventional short war scenario is highly questionable. Martin Van Creveld's five fundamental concepts of supplying the forces in battle will be difficult to achieve without an integrated NATO approach to logistics. The current stockpiles of pre-positioned US equipment and NATO war reserves are not filled to meet the requirements, are vulnerable to enemy attack and will not last very long. For example, the Misseau ammunition complex could be rendered ineffective by destruction of the railhead. The Benelux LOC on into the FRG is dependent on host nation support and will become a complex operation in the heat of battle which will disrupt the continuous flow of supplies and equipment to the uncertain locations of the fighting elements. There are no pre-planned primary and alternate assemble areas for the marry-up of US reinforcements with their equipment. The throughput of supplies from the corps rear boundaries forward is uncertain because of transportation shortages and a coordinated plan for mobile supply. Certain imbalances in the support-to-combat ratios cannot be overcome by host nation support; ammunition handlers is a prime example. The bases of supply at all levels will have to be mobile themselves in a war of meeting engagements or breakthroughs and this concept has not been put to the test by large scale NATO exercises. This lack of base mobility will restrict the mobility of the fire and maneuver elements in major battles to the detriment of outnumbered NATO forces. Insufficient helicopter transportation assets exist to implement a more

mobile delivery of supplies to fast moving fire and maneuver forces, which in turn restricts their movement, and little use is made of this capability in NATO exercises. The results of Nifty Nugget clearly show that the United States is not prepared to support the war effort in NATO. When you run out of supplies in less than 30 days you are not ready. America's wartime industrial base is "cold" and not responsive. Strategic lift is not adequate even for a surge period. Many important issues of mobilization and deployment remain to be solved. As LTG Heiser points out, NATO's Long Term Defense Program has a long way to go and NATO still counts for supplies from America and Canada. The DOD LOGMAP (NATO) has 99 tasks to be solved. In short, "nine-tenths" of the business of war is uncertain.

Analysis of the social dimension of war shows that lack of political will is the prime cause of NATO's unpreparedness for war. Western civilization just "tolerates" its military forces and lets other higher priorities get the resources. NATO fails to recognize the predatory nature of the Soviet Union which could attack simply because the opportunity presents itself to neutralize a potential threat to its historical imperative for security. NATO nations need to inform their citizens of the conventional superiority of Pact forces coupled with any lack of will to use nuclear weapons. General Close's argument of the break in the balance of forces and the effects of detente need to be widely heard. NATO needs to insure it can offer territorial defense and rear area security for its citizens and has an industrial base which can prepare and sustain any war. In short, NATO needs to be concerned with the preservation of Western civilization through better conventional security.

Analysis of the technological dimension shows that technology alone will not solve the problems of NATO's ability to conduct an effective conventional defense. Total integration of technological, operational and tactical concepts must be done. Imaginative changes in the later two concepts must occur where warranted. Performance is the key to the judgment of technology's effectiveness in the training environment. The Tank-Infantry-Artillery combined arms team must be highly mobile on the European battlefield; it should not be restricted. This team needs to be instilled with an offensive attitude and spirit of the attack. LTG Ott's artillery employment concept would certainly help its vulnerability problem and increase its mobile use, but the problems of target priorities and ammunition shortages need to be solved. A role for light infantry needs to be clearly defined. Chemical and electronic warfare deficiencies could be NATO's Achilles heel. Developing technology is costly and will not effect the battlefield in the next five years. In short, technology has its place on the modern battlefield and changes are necessary to insure its correct adaption to warfare.

In conclusion, the operational strategy for the conventional forward defense of NATO has not taken full account of Michael Howard's multi-dimensional "framework" concerning strategy. It appears, therefore, that NATO's plan for the deployment and use of forces in battle to achieve the political objective needs to be thoroughly reconsidered. The operational strategy needs to be reformulated; the logistics effort needs to be thoroughly integrated; the uses of technology need to alter some operational concepts; the popular commitment of all nations needs to be aroused; and, the war plans need to cover all likely contingencies of a mobile battlefield. If these are not done, we certainly have a "trip wire" situation.

Europeans need to remember their history of how the defense-only Maginot Line was the key reason for the rapid German victory over France in 1940. This defensive strategy made it easier for the Germans to overrun Europe. Hitler had only 10 tank divisions to use against France in 1940. France would not pay the price for 8-10 more divisions to provide depth to their defenses, so had inadequate forces to meet the German blitzkrieg with firepower and maneuver. NATO finds itself in this same predicament today.

CHAPTER III

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CHAPTER IV

NECESSITY FOR OPERATIONAL ALTERNATIVE

NATO's strategy of the Flexible Response is based on the strategic principle of forward defense and graduated response with forces organized into a TRIAD for implementation. This strategy is only as sound as the base upon which it rests--a credible conventional defense. The first three chapters have laid the foundation for the proposal of a new operational strategy for the forward defense of NATO. This new strategy would offer a more credible conventional defense considering the multi-dimensional shortcomings of the current version of the forward defense. To set the stage for the presentation of this new operational strategy a historical perspective is instructional.

The Russians have already rehearsed for their conventional attack of the frontiers of NATO. The Battle of Byelorussia from 22 June to 18 July 1944 offers a classic example of Soviet doctrine in action. Major Joseph C. Arnold presented a concise review of this battle in the July 1977 Military Review where he showed that Soviet doctrine remains inexorably tied to their World War II experience. The battle was planned for in 78 days and successfully conducted in 27 days by concentrating 10 to 1 force ratios at the four major breakthrough points. In capsule form the key points of the operation are:

The Soviet High Command began planning for Operation Bagration in mid-April 1944. (See Appendix 8.) The operation was designed to reduce the German salient centered at Vitebsk which would eliminate the Germans' limited threat to Moscow, open the shortest route into Germany and eliminate the German threat to the Soviet forces in the south. In a brief 78 days, the Soviets planned and prepared for the breakthrough.

The plan called for the relocation of at least 350,000 troops which comprised three combined armies, one rifle corps, two tank armies, three tank corps, one mechanized corps and two cavalry corps. The Soviets' concept called for a westward advance of 550 to 600 kilometers on a front initially 900 kilometers wide. The logistical efforts were monumental. During the buildup period, about 5,000 trains (carrying 3 million metric tons) were used to stockpile combat supplies.

Such a gigantic relocation of forces and supplies in the main battle area clearly called for exhaustive security measures. . . . Only five people knew of the plan in its entirety. The plan for each front was prepared by hand in one copy.

All movements including unit relocation and train deliveries were conducted at night. Units habitually camouflaged themselves well during daylight while cargoes on loading platforms were covered with bales of hay. Reconnaissance by company/battalion-size units was conducted along the entire front. . . . Tractors dragging branches followed tank and artillery units to cover their tracks. . . . Throughout the preparatory period, artillery and mortar fires were maintained in their old patterns while the units themselves were regrouped and relocated.

The Soviets, who had air superiority, . . . maintained their aircraft patterns about the same while they prohibited FEBA air reconnaissance by new commanders. . . . In May, the fronts and armies were put on radio silence, except air forces, air defense, reconnaissance and artillery fire direction nets.

Meanwhile the High Command instructed the 3d Ukrainian Front in the south to conduct a series of well-conceived displays from 29 May to 5 July. Units in the vicinity of Kishinev simulated and portrayed additional infantry divisions and tank corps. Dummy facilities and equipment, phony troop train movements and fictitious unit identifications were employed along with real air defense and fighter cover. . . .

By 23 June, the Germans believed that the attack would occur to the south, aimed at Rumania's valuable petroleum. The Germans concentrated tank forces in the south, thus weakening their Bagration front-line units. The Soviets had managed to generate overall superiority in personnel, tanks, artillery and aircraft. At some of the breakthrough points, their superiority was an astounding 10-to-1 in tanks and 7.7-to-1 in aircraft.

The attack opened with a two-hour artillery preparation featuring rolling and double-layer rolling barrages. The Soviets' prodigious planning of strategic and tactical surprise, as well as rigid troop discipline, paid off well. The outnumbered Germans were destroyed rapidly.

Tens of thousands were killed, and some 20,000 were taken prisoner in the initial encirclements. In 10 days the Russians made Minsk, and 100,000 Germans were trapped. In all, 25 German divisions were destroyed.

The Red army was well on its way to Berlin.¹

The outnumbered Germans and allies may be destroyed rapidly again because, as Clausewitz has pointed out, all other factors being equal, numbers ultimately prove decisive. Twenty-five German divisions were destroyed by 10 to 1 odds; 22 NATO divisions could be too by 6 to 1 odds. The parallels in military factors between the Battle of Byelorussia and the current defensive situation of NATO are striking and the risks are just as evident.

RISKS OF FORWARD DEFENSE

The analysis of the four dimensions of NATO's forward defense strategy in Chapter III has shown what the nature of the defense problem is. The current version of this forward defense has eight major risks to its successful implementation: 1) The Warsaw Pact can launch either preemptive or breakthrough attacks with little warning thereby causing the battlefield to become a series of large scale meeting engagements for which NATO has no contingency plans and little doctrine. These type of operations have been emphasized by John Erickson:

Mobile operations and manoeuvre are, in the Soviet view, the concomitant of the use of nuclear weapons /or the threat of their use/. The large sectors for deployment are reduced to the narrower attack front-ages in order to maximise the conditions for overcoming enemy defenses, after which strong armored

forces will be loosed into the rear and the deep rear. The anticipated rate of advance is in the order of 70 miles in a 24-hour period, the emphasis is on high-speed attacks, speedy crossing of river lines, the employment of airborne and helicopter-borne forces ahead of the advance, efficient cross-country movement, fighting with open flanks and striking on by night as well as by day. The basic attack form will be 'off the march' (without prior concentration) and the 'meeting engagement' . . . the accepted form of action, both of them high-speed manoeuvres. . . .²

2) the current operational strategy of NATO commits outnumbered forces to a linear defense of the border which has no depth, no immediate reserves or reinforcements (French forces won't go to the border) and subjects its forces directly to the conventional or nuclear firepower, and chemical or electronic advantages of the Pact forces; 3) the logistical support of this linear defense or subsequent meeting engagements will have many supply problems, including stocks to last less than 30 days, and no integrated approach or plans; 4) the operational concept has not fully integrated the modern technology of speed and firepower to maximize its effectiveness at a time when quality could make the difference; 5) the collective national wills of NATO nations are not committed to the conventional defense of NATO because it costs too much, and therefore have placed too much reliance on nuclear weapons as deterrent forces. This situation forces the political decision to defend the border as a "trip wire" for escalation; 6) the graduated response to nuclear war will not achieve anyone's political aims; 7) if there is no credible conventional war fighting capability there is no real deterrence, especially if there is no political will to use nuclear weapons; 8) the total set of war fighting requirements for forces and supplies may not have been fully stated due to the over-reliance on nuclear weapons for so many years. This lack of requirements could undercut

the conventional war-fighting capability. All of these risks hinge on the operational strategy for the forward defense because this concept determines the requirements, defines the priorities and distributes the scarce resources. Perhaps a different strategy could make better use of these scarce resources.

The principle difficulty is how to organize the forward defense so as to protect the territorial integrity of the FRG. The critical task is how to meet the main attacks and to know where they are coming. The essential issue is the nature of modern, maneuver warfare and the Soviet military doctrine. As we have seen Soviet doctrine is to preempt or conduct breakthrough operations. If the Soviets preempt there is no chance for a cohesive forward defense and the nature of the war will be maneuver warfare. If the Soviets can't preempt or choose to conduct breakthrough operations then they must deceive NATO forces as to the location of the main attacks by conducting holding operations across a broad front while concentrating sufficient force-ratios to conduct breakthroughs at selected and vulnerable points. Just as the attacker concentrates his forces at certain locations on the battlefield so must the defender concentrate his forces and supplies opposite these same locations. The key then is to get the enemy to commit his main forces to the breakthrough locations before NATO forces are committed against them. The crux of the matter is how to do this?

MOBILE ENGAGEMENTS IN DEPTH

The way for NATO to get the Soviets to commit their breakthrough forces early to their main attacks is to conduct mobile warfare, beginning at the border, right from the outset. The conduct of this mobile warfare must cause the Soviets to be drawn into the battle and to be deceived as to the true nature of the defense and its dispositions. Before the Soviets attack they must conclude that the risks are no longer incalculable and this will require foreknowledge of NATO's defensive dispositions. The Soviets will have to make planning assumptions about NATO's dispositions prior to the start of the attack and these will likely be based on NATO's historic linear dispositions and peacetime intelligence. Thus, they will concentrate in echelonment for the breakthroughs before they cross the border. Of course, they will provide themselves with certain flexibilities to change these concentrations. But, we have seen that the Soviets favor patterns to their formations, so it is unlikely they would conduct a major offensive against NATO without first designating the likely main attack forces and routes and the supporting or holding attack forces before they start. It would take the Pact too long to attack on a broad front, locate vulnerable points, develop the situation, and then shift reserves to effect the breakthroughs. They will more likely assume where the breakthrough points will be, based on all available peacetime intelligence, prior to the attack, so that once the attack is launched few changes have to be made. Thus, speed, shock action and surprise can be maximized. If they choose to first conduct a preemptive attack with BMP regiments, then they surely will plan the follow on forces in set patterns weighted with main attack forces on high speed approaches to secure deep objectives and the necessary reserves for flexibility.

In either case, NATO reconnaissance and intelligence forces must locate these main concentrations quickly, if possible, even before the battle begins.

After NATO locates the breakthrough attacks do they have sufficient divisions to concentrate against these attacks? The following table suggests that NATO does, providing these divisions can be concentrated early against the Pact's main attacks. The options show different force ratios favoring the Pact, and how many of the first 48 divisions would have to be committed to main and holding attacks to achieve these ratios under short warning conditions. The required NATO divisions show the number of NATO's first 22 divisions that would have to counter various numbers of breakthroughs by maintaining at least 1:2 ratios against each Pact breakthrough attack. Of course, NATO's terrain advantage adds a multiplier effect to these ratios. 1:2 ratios are necessary because NATO forces would be conducting mobile warfare and attacking forces need more forces. Holding forces could even be thinner to add more strength to the meeting engagements against the Pact's main attacks.

WARSAW PACT BREAKTHROUGH OPTIONS

	<u>No. of Breakthroughs</u>	<u>Required Pact Divs</u>	<u>Required NATO Divs</u>	<u>NATO Divs Actual</u>
1. 6:1 Ratios	4	24 in Main; 24 Holding	12 in Main; 12 Holding	Yes -2
2. 6:1 Ratios	5	30 in Main; 18 Holding	15 in Main; 9 Holding	Yes -2
3. 8:1 Ratios	3	24 in Main; 24 Holding	12 in Main; 12 Holding	Yes -2
4. 8:1 Ratios	4	32 in Main; 16 Holding	16 in Main; 8 Holding	Yes -2

WARSAW PACT BREAKTHROUGH OPTIONS (Continued)

	<u>No. of Breakthroughs</u>	<u>Required Pact Divs</u>	<u>Required NATO Divs</u>	<u>NATO Divs Actual</u>
5. 8:1 Ratios	5	40 in Main; 8 Holding	20 in Main; 4 Holding	Yes -2
6. 10:1 Ratios	3	30 in Main; 18 Holding	15 in Main; 9 Holding	Yes -2

This small sample of options merely represent a worst case of a larger number of possible combinations of Pact forces, ranging from 39 to 52 divisions from a standing start, but which would show the same results. Namely, that the Pact, as the Russians did historically, can conduct only a reasonable number of breakthroughs in any major offensive against NATO in a short warning scenario. To achieve surprise and deception as to where the main attacks are coming the number of planned breakthroughs must be limited because holding forces must cover a broad front to pin NATO forces down or spread them out. Also, the breakthrough forces need to create sufficient space through the defense for the support forces to follow. Thus, the Pact options shown here are the more reasonable ones to be expected. The table illustrates that NATO can concentrate ratios against the Pact breakthroughs that offer reasonable chances for conducting meeting engagements as NATO forces know the terrain so can outmaneuver the Pact forces. This is not to say that sufficient forces exist to insure complete success on the part of NATO. As the table shows NATO needs a minimum of two more divisions just to be able to concentrate at 1:2 ratios. But, this operational strategy offers a better chance than defending the border by linear dispositions. However, in the next 7 to 30 days after D-day the Pact can generate another 50-60 divisions to about 6-15 for NATO, tipping the force ratios back in favor of the attacking PACT forces. Thus, NATO must follow a strategy of attacking each PACT breakthrough by annihilating or dislocating the enemy forces. These breakthroughs must be so disrupted that the follow on PACT division arriving within the next 30 days have to literally start over again. To achieve these disruptions NATO may have to initially concentrate all of its tactical airpower against the breakthroughs. A portion of America's B-52 fleet may have to be used

in a conventional role. NATO's artillery will have to be heavily weighted against the breakthroughs. The holding attacks may have to conduct delaying operations to conserve combat power. NATO will have to shift forces continually to reinforce successes. In this manner of halting the breakthroughs, the Soviets might be convinced at this point that future risks are incalculable and choose to negotiate. If not, NATO will have to continue conducting successful meeting engagements on a mobile battlefield until it can generate more reinforcements between 15-45 days to conduct limited counterattacks. Granted some territory of the FRG will be traded in these series of meeting engagements for the opportunities to conduct disrupting attacks, but the chances of deep penetrations will be lessened, the Pact will not achieve their main objectives and nuclear war may be averted. These NATO disrupting actions taken cumulatively over 30 days will certainly set back the Pact's strategy and timetables. In turn, this will place NATO in a better bargaining position than if NATO had defended the border with no defense in depth.

How can NATO be prepared to conduct successful attacks of annihilation or dislocation against the Pact breakthroughs? General J. F. C. Fuller in speaking of a mobile battlefield said, "At the moment he who grasps the full meaning of this change (expanded communications), namely, that the earth has now become as easily traversable as the sea, multiplies his chances of victory to an almost unlimited extent. Every principle of war becomes easy to apply if movement can be accelerated at the expense of the opposite side."³ General Fuller goes on to explain the way to accelerate movement at the expense of the other side is by creating unexpected situations for him. He says:

We must never do what the enemy expects us to do; instead we must mislead him, that is, control his brain by our own. We must suggest to him the probability of certain actions, and then, when action is demanded, we must develop it in a way diametrically opposite to the one we have suggested through our preparations.⁴

General Fuller concludes by showing that Napoleon did not try to break his enemy's front and then while his forces were disorganized risk being hit by the enemy's reserves; but instead to draw the enemy's reserves into the firefight, and directly to breakthrough them or envelop them.

Liddell Hart explains these ideas further and defines four methods for dislocating the enemy's forces by creating unexpected situations by moving to: 1) upset the enemy's dispositions and, by compelling a sudden change of front, to dislocate the distribution and organization of his forces; or, 2) to separate his forces; or, 3) to endanger his supplies, or, 4) to menace the routes by which he could retreat to his base areas. A dislocation of forces can result from one or all of these methods.⁶

Major Richard Hart Sinnreich captures the essence of what both Hart and Fuller are describing in his critique of the active defense when he depicts both the active defense and maneuver warfare as involving movement, but points out:

. . . whereas movement in the active defense is essential reactive, designed to concentrate defensive firepower with the flow of the battle in order to service targets, the movement connoted by the term maneuver is fundamentally initiative, designed to rupture the flow and tempo of the battle, and in the process defeat not the constituents but rather the coherence of the attack. The first approach seeks victory through the destruction of the attacker's combat power, the second, through the disruption of his capacity to employ it.⁷

Major Sinnreich therefore sees maintaining the defensive initiatives through maneuver as the primary means of defeating the enemy's attack.

Taking the essence of what these writers are saying in order to apply it to the situation confronting NATO requires, in my opinion, certain revisions. This is particularly true when adapting a maneuver offensive within the framework of a defensive operational environment. This is not the same as conducting offensive operations. The essence of these writers collective argument is that the defense must be conducted by the maneuver of forces in such a manner as to disrupt the coherence and coordination of the enemy's attacks. This is done by conducting unexpected maneuvers against the more vulnerable parts of the enemy's attack formations to disrupt his control and plans. The way to get the enemy to commit his reserves is to offer him a reasonable target of opportunity by directly confronting his main attack forces. In my opinion, this should be done by defensive oriented forces conducting delaying or holding actions or spoiling attacks. Then as the enemy, sensing weakness, moves to conduct his main attack, the defender must have already maneuvered attacking forces into positions from which strong enveloping attacks can be conducted into the flanks or rear of the enemy's formations. In my view, these are classic meeting engagement situations done with the smaller part of the force conducting defensive operations and the larger portion of the force conducting offensive operations. But, the essential point is that these differing operations are designed to compliment one another. Once the enemy's direction of attack has been split, NATO holding and attacking forces must coordinate their actions closely so as to affect envelopments and cause as much disruption as possible to the Pact breakthrough.

Then, sufficient NATO forces, including tactical air, must remain to contain, destroy or pursuit Pact forces, while the remainder of NATO's forces disengage and shift to another part of the battlefield to attack again. These annihilation and dislocation operations must be highly coordinated, combined and combined arms, joint operations where all available firepower is brought to bear at the points of decision so as to effect maximum destruction of the engaged Pact forces. The tactics of these meeting engagements must be practiced in all NATO exercises and general defensive plans.

How must the battlefield be organized to facilitate the conduct of these large-scale meeting engagements? The necessary battlefield conditions for mobile warfare are space and depth, time to maneuver, timely intelligence or location of the enemy, proper use of the terrain and mobile fire and maneuver units. These conditions must be created through a defensive operational environment in which the Army group, corps and division commanders have great freedom of action and initiative in designing the scheme of maneuver against each Pact breakthrough. But, these meeting engagement plans must be complimentary to an overall AFCENT operational strategy of controlling and maneuvering NATO forces. This operational strategy will ensure the proper allocation and distribution of NATO forces commensurate with the development of the Warsaw Pact attack. This AFCENT operational strategy should create a mobile battlefield and be designed to incorporate the operational essentials of: 1) a sufficiently large cavalry screen to locate, lock on to and slow down the Pact's main attacks and screen the Pact's holding forces; 2) a civilian evacuation plan which systematically evacuates the FRG's population back from the border for at least 100 kilometers; 3) a plan for a pattern of dispersed forward assembly areas that cannot be reached by Pact long range fires for at least 24 hours,

to which NATO's main defensive forces can be quickly assembled; 4) a plan to react out of these forward assembly areas to reinforce the cavalry operations and to conduct meeting engagements against the Pact breakthroughs and holding operations against the Pact's holding forces; 5) a plan to rapidly receive the reserves and reinforcements and to move them forward into locations from which either reinforcement or counter-attack operations can be conducted; and, 6) a territorial defense plan which defends certain key city/industrial complexes in the first 100 kilometers from the border and the militarily significant points throughout the remainder of the FRG. Anti-armor strongpoints could be constituted throughout the defensive belts.

A proposed method of articulating this AFCENT operational strategy would be to organize the battlefield space, which includes about 25-40 kilometers into Pact territory and the first 125 kilometers of the FRG, into five defensive belts of about 25-40 kilometers each (the width of the belts would be dictated by the logic of the terrain), each parallel to the border and in succession from it. These belts would be color coded and overlaid with a series of coded checkpoints for easy reference of location and maneuvering of forces. See Appendix 9 for a depiction of this Rainbow Belt Concept. Cavalry forces would occupy the yellow belt and all available long range reconnaissance and intelligence forces would concentrate on the red belt and deeper back. Long range, small-sized reconnaissance units (could be Ranger or Special Forces) would be infiltrated on or even before D-day to penetrate as deep as necessary into Pact territory to locate the enemy concentrations for breakthroughs and to later-on direct air strikes as they follow the Pact forces. These forces must be trained for this mission. NATO's main defensive forces would have designated

and dispersed forward assembly areas located in the Blue belt, the shortest distance from their present casernes. Engagement areas would be preplanned in the Yellow and Blue belts on all logical avenues of approach. Cavalry forces will try to canalize Pact forces into these areas. NATO's main forces would be prepared to conduct meeting engagements against any Pact forces coming into these areas. The initial corps boundaries should be located astride the traditional invasion routes or logical avenues of approach. But, they must be quickly adjusted by AFCENT to orient the Corps against the Pact breakthroughs. The French and Canadian reserve forces must be convinced, through negotiations, to occupy key mobile reserve positions in the Green belt to be committed by AFCENT as needed. All reserves and reinforcements must occupy assembly areas in the Orange belt as soon as possible. The organization and primary defensive function of each of these belts can be seen in this chart:

RAINBOW BELT CONCEPT

<u>BELT</u>	<u>PRIMARY FUNCTION</u>	<u>TYPE FORCES</u>	<u>ADDITIONAL FUNCTIONS</u>
Red	Intelligence	All sources of intelligence; Rangers; Special Forces; Partisans.	Direct air strikes; raids; partisan activities.
Yellow	Cavalry Screen	Minimum of one regiment per Corps to be stationed near border. ^{1/}	Locate main attacks and develop the situation.
Blue	Conduct spoiling attacks; meeting engagements. ^{2/}	First arriving main forces are committed first. ^{2/} Stay behind patrols.	Conduct holding operations. Strong points of defense.
Green	Conduct annihilation and dislocation operations. ^{3/}	Later arriving main forces and some reserves. ^{3/}	Reinforcement actions.
Orange	Reserves and staging areas.	Prepare for counter-attacks or reinforcing operations.	Provide defense-in-depth. Territorial defense.

1/ The post WW II treaty must be changed to allow FRG forces on the border and to have Belgium and Netherlands join the British and US cavalry units on the border. Each cavalry regiment should have an air cavalry squadron.

2/ Initially main units will be committed to reinforce cavalry successes so as to slow down the main attacks for the meeting engagements to envelop and disrupt.

3/ Later main units conduct envelopment operations to disrupt the Pact breakthroughs. These could also occur in the Blue belt.

The depiction at Appendix 9 and the above chart are merely a generalized concept for a new AFCENT operational strategy which would have to be planned in great detail to insure the coordinated and flexible employment of all of NATO's forces throughout the depth of the FRG. NATO planners must plan for the eventuality of a PACT preemptive attack or a resultant series of breakthrough operations; both of which would result in a series of meeting engagements. This Rainbow Belt Concept easily incorporates the current

defensive plans of NATO but, more importantly, it allows for a defense in depth concept which adds flexibility and substance to the current plans in case they are preempted or penetrated. It prepares the NATO forces for all likely contingencies against Pact options and insures a sounder conventional response. Assembling the main forces well back from the border greatly complicates the Soviet's ability to target NATO forces for nuclear or chemical strikes; particularly, preemptive strikes. If properly formulated it would also build a greater deterrence in the TRIAD. This mobile defensive strategy has several advantages over current NATO war plans.

ADVANTAGES OF MOBILE ENGAGEMENTS

In addition to the two key advantages of defense in depth and stronger deterrence, just mentioned, there are eight other major advantages to this new operational strategy:

1. More space and depth are provided to the battlefield which causes the Pact's formations to be more extended and more vulnerable to envelopment; it makes the Pact more susceptible to revealing his main attacks; it allows NATO forces to use terrain more favorable for maneuver; it causes the Pact to commit his weighted reserve echelons sooner than anticipated, on terrain favorable to NATO; and it makes Pact forces more vulnerable to stay behind units, long range reconnaissance units, partisan warfare and NATO's long range airpower.

2. Dispersion of NATO's main force units at the outset of the battle reduces the opportunities and effectiveness of the Pact's firepower, chemical, electronical and nuclear first strike advantages over NATO; makes targeting difficult for Pact longer range weapons capability; and adds more uncertainty for the Pact's attacking forces as the battle develops.

3. NATO has the flexibility to concentrate its forces so as to create reasonable force ratios for conducting meeting engagements that disrupt Pact breakthrough attacks; more opportunity is then available for envelopments to annihilate and dislocate Pact forces; NATO forces are caused to practice meeting engagements in NATO exercises and are therefore prepared for this eventuality; and more time will be added to facilitate an earlier French decision to join the battle.

4. A territorial defense can be organized throughout the FRG to affect strong points of defense near the border; to establish strong points of defense around major cities/industries in the defensive belt areas; and, to provide for the defense of the rear areas in depth. As a supplement to the defense in depth concept a strong territorial defense of anti-tank and BMP strong points could be established in the Green Belt as a back up to ambush and attrite any penetrating Pact forces.

5. A responsive plan can be devised for the orderly evacuation of the civilian population within the first 100 kilometers of the border so that military operations will not be restrained and civilian hostages cannot be taken. This will also help in the coordination of deployment routes forward for the main forces to avoid the streams of civilian refugees.

6. More time will be afforded for the mobilization of reserves and the arrival of reinforcements from the United States, Canada, Britain and perhaps France. Each country must be able to mobilize and deploy all the forces it can in the first 10 days of the war. NATO's logistics effort will have more time to operate from secure, mobile bases within the defensive belts provided the integration process is completed before the war starts.

7. A mobile battlefield lessens the risks of the use of nuclear weapons because of the targeting difficulties of comingled forces and increased chances for a stronger conventional defense by NATO.

8. A more viable conventional defense opportunity by NATO should strengthen the political will and heighten the need for the shared burdens of defense among all NATO partners. Each NATO nation, except France and Canada, would have to provide NATO covering forces by providing a cavalry regiment for each of their corps, to be located on the border in peacetime. These eight regiments side-by-side on the border will be a substantial deterrent and war fighting force which demonstrates NATO solidarity. Each NATO nation would have to build a responsive mobilization system to meet NATO force requirements, and to complete the task of an integrated logistics system.

All of these advantages can be gained by organizing for a stronger conventional defense of NATO based on an operational strategy of mobile engagements in depth. The nature of this strategy is not only in keeping with the likely realities of a future NATO battlefield, it is also in consonance with the evolution of modern warfare.

STRATEGY TO MATCH MODERN WARFARE

There are two principle aspects to the changing nature of modern warfare in the 20th century, the increased mobility and firepower of the means of war and the increased danger to the individual soldier. Both of these aspects must be taken into account when designing an operational strategy for the conduct of the battles. This is particularly true for NATO because it can not afford to lose men and equipment at the rate the

Warsaw Pact can. After tracing the first three significant revolutions in the development of warfare, John Keegan explains the fourth revolution began with the post-WW II decision of the Russians, Americans and Europeans to put their entire armies into armored vehicles. This was made possible by the enormous increase in industrial output of all these countries. Professor Keegan points out that every combat soldier is now in an armored vehicle and he is expected to spend most of his time in or near this vehicle. It seems to him that this revolution threatens to dissolve the distinction between man and weapon. In an all vehicular army the warrior becomes part of the weapon. He asks the important question as to whether the soldier will be capable of matching up to the weapon as a complementary biological system. He cites the stresses and depersonalization that air crews suffered in WW II and how the Air Force set fixed number of missions followed by rest periods to overcome them. He postulates about the effects of modern combat on average combat soldiers, who are not as highly selected as aircrews and says:

If one thinks clinically about the effect of the modern armor battle on the human beings who have to take part in it, it appears that they may be expected to perform more or less at aircrew level stresses. . . the soldiers require continuous incarceration inside uncomfortable vehicles, continuous wearing of uncomfortable or unhygienic protective clothing, little or no contact with the external environment, tenuous communication with groups or commanders outside one's own, and the continuous demands of the machine itself to be satisfied. Add to that the real combat ingredients of danger and the low perception of risk that I have mentioned earlier, and it seems to me that they approach the level of aircrew stress. Indeed, the stress may be higher because land combat is planned to go on around the clock, day after day.⁸

It would seem true that the total mechanization of armies does represent a clear break from previous warfare and that the soldier is threatened with

a military phenomenon that is new in warfare. In his new book, The Faces of Battle, John Keegan develops this theme further and outlines five distinct changes the 20th century soldier has to cope with: 1) the length of battles are getting longer and soldiers have to spend more time in the front lines to be subjected to the heat of battle; 2) the objective dangers of the killing powers of modern weapons are greater with soldier possessing the weapons to lay down impenetrable zones of fire; 3) the longer exposure to the effects of battle because the combat zones are wider and the ranges of weapons greater; 4) the accident rates are higher in mechanized forces and medical evacuation more difficult; and, 5) the technical difficulties that accompany mechanized forces places more skill demands on soldiers than ever before.⁹

All of these factors tend to heighten the levels of stress and reduce the sense of importance of each combat soldier, and this can affect his battlefield performance. The vast array of modern weapons potentially can produce mass casualties of great proportions that will even surpass the high rates of WW II or the Arab-Israeli conflicts. This reality would be even more true if the battlefield was more static than fluid. The linear dispositions and "border hugging" operations of NATO's current war plans could quickly evolve into a static battlefield situation. A static zone of action could easily turn into a wasteland of deadly firepower exchanges in favor of the Warsaw Pact's reserves.

On the other hand if NATO changes its operational strategy to fighting mobile engagements in depth, as was partially envisioned by General Lemnitzer's mobile defensive concept quoted on page 3 of Chapter I of this study, this static environment will not happen. The way to avoid the

devastating dangers of the modern battlefield on the soldiers is to keep them moving. A moving target is harder to hit. Even inside an armored vehicle a soldier feels more assured if the vehicle is moving and when his vehicle is moving in formation with his unit's vehicles his sense of engagement is heightened. Thus, a strategy of meeting engagements where NATO can pick the time and place of the engagement will offer a better chance of success, from the soldier's perspective, than letting the Warsaw Pact know right where NATO forces are on the border. To those critics who would say that this new operational strategy violates the strategic principle of the forward defense by giving up some of the FRG's territory to conduct meeting engagements, I can only say it is highly likely that meeting engagements will occur and territory will be lost anyway under current war plans. Therefore, why risk the destruction of any of the main forces until NATO chooses the points of decision. Defending the border leaves this important choice to the Soviets. Fighting mobile warfare is less risky than linear warfare on the modern battlefield and NATO needs to employ its fewer forces in the least risky strategy. The stakes are high. The preservation of the democratic way of life for the FRG and of NATO itself are worth a rethinking of how NATO intends to conduct its battles to attain its political objectives.

CHAPTER IV

FOOTNOTES

1. Major Barney F. Slayton, "War in the Ether: Soviet Radio-Electronic Warfare," Military Review, Vol. LX, January 1980, pp. 61-64.
2. Richard D. Lawrence and Jeffrey Record, US Force Structure in NATO, The Brookings Institution, Washington, DC, 1974, p. 11.
3. Adrian Liddell Hart, The Sword and the Pen, Thomas Y. Crowell Company Publishers, 1976, p. 270.
4. Ibid., p. 273.
5. Ibid., pp. 274-275.
6. Ibid., p. 319.
7. Major Richard Hart Sinnrush, "Tactical Doctrine or Dogma?", Army, September 1979, p. 17.
8. John Keegan, "The Past and Future of Combat," Elihu Root Lecture, USAWC, 2 May 1978, pp. 10-11.
9. John Keegan, The Face of Battle, The Viking Press, New York, 1976, pp. 298-314.

CHAPTER V

CONCLUSIONS AND RECOMMENDATIONS

The following conclusions are the key ones to be drawn from this study:

1. The early assessment of the number of conventional divisions needed to defend NATO was set at 96 just eight years after World War II, when the experience of the war was still fresh in the minds of the planners. The comparative force-ratios with the WARSAW PACT would be more in balance had these number of divisions been built. A certain number of these required divisions can be overcome by superior forces, technology and tactics but not as many as are evident today. In the end, the Warsaw Pact still has the superiority in force-ratios, particularly over the first 30 days, and can concentrate 6 to 1 or better ratios at selected points in NATO's defenses.

2. The Warsaw Pact has definitely prepared itself to conduct offensive operations against NATO. It has two primary conventional options open to it, both of which follow a short warning attack plan. The pre-emptive attack and the multiple breakthrough attack are two patterned attacks that will create an operational environment of a series of meeting engagements in depth. The Soviets could launch either of these attacks when the risks to them are no longer incalculable and the opportunity to eliminate a threat to Soviet security, the FRG and then NATO, would be too great to pass up. However the Soviets attack they will use patterns and will follow their seven principles of war.

3. NATO's current war plan of linear dispositions on the border with no substantial reserves and untimely reinforcements offers high risks

of be preempted or pinned down and penetrated by breakthrough attacks. Either of these attacks will meet no substantial defense in depth and no rehearsed contingency plans to cover a series of meeting engagements in depth.

4. Analysis of the forward defense using Michael Howard's four dimensions of strategy showed that NATO's strategy has not taken full account of all the necessary dimensions of warfare. The operations do not take account of all contingencies; the logistics are not integrated, will have difficulty supplying from mobile bases in a timely manner and will exhaust their current stocks in too short a period; modern technology which has great mobility potential is not being sufficiently used; and the social and political will of NATO's members has not been convinced of the necessity for a strong conventional defense.

5. An AFCENT operational strategy of mobile engagements in depth is needed to provide the major advantages outlined in the next to last section of Chapter IV. This strategy would give the initiative to NATO and would create the unexpected for the attacking Pact forces. NATO would be able to concentrate its forces so as to reduce 6 to 1 ratios down to 2 to 1 ratios and still conduct holding operations across a broad front. These tactics offer reasonable chances of halting the Pact attacks and preventing the attainment of Pact objectives, which in turn places NATO in a better bargaining position.

6. NATO's logistics system needs to be fully integrated so that the five logistical concepts of Martin Van Creveld can be assured. Host nation support agreements need to be finalized in concrete planning terms so that capabilities can be compared to the total logistical requirements for

supporting the war. These total requirements also need to be reassessed so that stockage levels are relatively the same for all nations and that they will last for the duration of the war. Detailed plans need to be made for the reception of reinforcements and the marrying up of their equipment in ways that support the forward deployment of these divisions and their support as rapidly as possible. The shortcomings of exercise Nifty Nugget needed to receive a higher priority for the allocation of resources and the methodology needs to be extended to all US services, the war plans and to the NATO members capabilities.

7. Technology has not replaced the necessity for a strong operational effectiveness on the part of leaders, soldiers and the tactics and support employed. New technology needs to be thoroughly integrated into the war plans and operational concepts need to be revised where necessary to take full advantage of the technical capability.

8. The social and political will of the member nations of NATO needs to be strengthened by stronger leadership and more articulation of the risks and necessity of stronger conventional defenses. A workable evacuation plan for the civilian population for at least the first 100 kilometers of FRG territory needs to be implemented and rehearsed. This plan will demonstrate to the population that the government cares for their safety and welfare and needs their commitment. Rear area security needs to be strengthened for the benefit of population and military installations and activities.

9. All NATO nations need to improve their capability to mobilize reserves and their industrial bases and provide reinforcements to the battlefield by D+10 and continuous supplies from the start. NATO needs to make two more divisions, at a minimum, ready for D-day commitment

so that 24 NATO divisions can be concentrated against the 48 Pact divisions as the appropriate times and places to achieve at least 1 to 2 force ratios.

10. The necessary force structure changes have to be made in more support to combat ratios; in the creation of one cavalry regiment, with an air cavalry squadron, per national corps; in the mobile logistics bases supported by helicopter transportation; and, in chemical and electronic warfare capabilities.

11. NATO needs to work harder at coalition warfare. It needs to insure that combined, joint and combined arms operations are continuously practical both in daily training at the unit levels and in all NATO exercises. The capabilities of NATO nations need to be interchangeable so that no time is lost on a fast moving battlefield where allied units are comingle in the same battle. Interoperability needs to become second nature in all NATO activities.

12. A stronger conventional defense in the four dimensions of modern warfare will strengthen the deterrent value of the TRIAD which can only add to the security of western civilization and lower the risks of war in the first place.

13. US and allied doctrine needs to be expanded to more adequately cover large-scaled meeting engagements, where the objective is the annihilation or dislocation of the coherence of the enemy's attack. The active defense is not an operational strategy for the defense of Europe or anywhere else in the world; it is simple defensive tactics.

14. More extensive use needs to be made of the helicopter in the defense of NATO. The expanded use should occur in the screening of the border regions, in medical evacuation (particularly of mass casualties), in the throughput of logistics straight to the using unit, in the movement

of reserves and reinforcements in the rear areas, in the antitank role at the division level and in the support of long range reconnaissance and stay behind operations.

These conclusions are supplemented by data contained in the summaries of all major sections of the chapters of this study. Only the highlights have been presented here.

The following recommendations are also the key ones to be drawn from this study. It is recommended that:

1. NATO contingency plans be designed for countering Warsaw Pact preemptive or breakthrough attacks under short warning scenarios.
2. NATO adopt an operational strategy of mobile engagements in depth along the lines of the Rainbow Belt Concept or some suitable concept which insures maneuver tactics of annihilation or dislocation.
3. NATO doctrine and contingency plans be expanded to cover the conduct of large-scaled meeting engagements of annihilation or dislocation.
4. NATO's logistics system be totally integrated and sustainable and operate from mobile bases.
5. All NATO members be capable of mobilizing their industrial bases quickly and a sizeable portion of their reserves or reinforcements to be deployed and committed to battle by D+10.
6. Force structure changes or modernizations take place which make available two more NATO divisions for D-day operations, a cavalry regiment per national corps to be stationed on the border, the helicopter assets to accomplish conclusion number 14, and a viable chemical and electronic warfare capability for all of NATO's battalion-sized units.
7. Coalition warfare be practiced in all of NATO's training on a routine basis.

8. NATO conduct a Nifty Nugget type exercise to determine its capabilities to execute the war plans.

9. NATO have detailed plans for the evacuation of the civilian population of the FRG for at least the first 100 kilometers and generalized plans for the control of civilians in the rear areas.

10. NATO expand its territorial forces so that adequate rear area security can be provided for all military significant activities such as ports, airfields, POMCUS stocks, war reserve stocks, bridges, railroads, industrial areas and the like.

Implementation of these recommendations will insure a stronger conventional defense for NATO and lessen the risks that now threaten western civilization.

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APPENDIX 1

MAJOR ASSUMPTIONS

Following are the major assumptions of this paper:

1. The free enterprise and social system of capitalistic countries will not fail.
2. NATO will remain viable and will maintain the strategy of flexible response.
3. The ability to defend NATO is the cornerstone of European unity.
4. Defense of the Central Region is the key issue.
5. Forward defense will not change as a strategic principle/concept.
6. NATO will not be the aggressor in initiating a conflict with WARSAW Pact.
7. A period of political deterioration will occur between the Soviet Union and the West prior to a WARSAW Pact attack.
8. NATO will receive at least 48 hrs. warning.
9. As long as the United States has a creditable 2d strike capability there is strategic nuclear deterrence, providing no linkage exists between strategic and tactical nucs and the heartland of Russia is not struck by either type force.
10. The Soviets will not begin the war with nuclear weapons and won't use them until we do (or threaten their use).
11. The WARSAW Pact nations will support the USSR in the attack upon NATO.
12. The WARSAW Pact is quantitatively superior to NATO's forces and has the military initiative.
13. The NATO-WARSAW Pact front will not be stable and the battles will be fought in depth.

APPENDIX 2. WARSAW PACT GROUND FORCES

This chart was taken from Colin Gray's report, Defending NATO-Europe,
Hudson Institute, November 1977, p. 22.

SOVIET GROUND FORCES (DIVISIONS)				
DEPLOYED IN	TANK	MOTOR RIFLE	AIRBORNE	COMMENTS
EAST GERMANY	10	10		ALL CATEGORY 1 ^a
POLAND	2			ALL CATEGORY 1
CZECHOSLOVAKIA	2	3-4		ALL CATEGORY 1
HUNGARY	2	2		ALL CATEGORY 1 ^b
EUROPEAN USSR	22	40	5	ONE-NINTH CATEGORY 1 ^c
ASIATIC USSR	11	58	2	SINO-SOVIET BORDER= ONE-THIRD CATEGORY 1 ^d
WARSAW PACT ALLIES' GROUND FORCES (DIVISIONS)				
EAST GERMANY	2	4		e
POLAND	5	8	1	f
CZECHOSLOVAKIA	5	5		g
HUNGARY	1	5		h
RUMANIA	2	8		i
BULGARIA	2 ⁺	8 ⁺		j

*Divisions and/or division equivalent
NOTES:

- a. CATEGORY 1=75-100 PERCENT FULL STRENGTH WITH FULL EQUIPMENT. THE GSFG IS TOTALLY INDEPENDENT OF EAST GERMAN SUPPORT.
- b. THE RELEVANCE OF THE 4 SOVIET DIVISIONS IN HUNGARY TO THE CENTRAL FRONT BECAME A POLITICAL ISSUE IN THE MBFR PREPARATORY NEGOTIATIONS (WHICH THE S.U. WON). THESE DIVISIONS COULD BE EARMARKED FOR SOUTHERN EUROPEAN OPERATIONS, BUT, EQUALLY LIKELY, THEY COULD (A) STRIKE INTO AUSTRIA, OR (B) AUGMENT THE CGSF IN CZECHOSLOVAKIA.
- c. CATEGORY 2 DIVISIONS=50-75 PERCENT MANNED AND UE; CATEGORY 3=25-50 PERCENT MANNED AND UE.
- d. THE RELEVANCE OF THE 73 DIVISIONS IN THE SOUTHERN USSR (24), CENTRAL USSR (6), AND SINO-SOVIET BORDER AREAS (43), TO A CONFLICT IN EUROPE IS A FUNCTION OF (A) THE DURATION OF WAR IN EUROPE, AND (B) THE POLITICAL POSTURE OF THE PRC. IT SHOULD BE RECALLED THAT THE SIBERIAN DIVISIONS SAVED MOSCOW IN NOVEMBER-DECEMBER 1941.
- e. THE ARMED FORCES OF THE GDR WOULD CERTAINLY BE EMPLOYED IN THE FIRST ECHELON OF A WARSAW PACT ATTACK.
- f. IN ADDITION TO THE 14 DIVISIONS CITED HERE, THERE IS ALSO AN ELITE AMPHIBIOUS ASSAULT DIVISION. THE TANK DIVISIONS ARE VERY CLOSE TO COMBAT READINESS (CATEGORY 1) AS IS THE AIRBORNE DIVISION.

APPENDIX 3. MOBILIZATION TIMES

This chart was taken from Colin Gray's report, Defending NATO-Europe, Hudson Institute, November 1977, p. 25

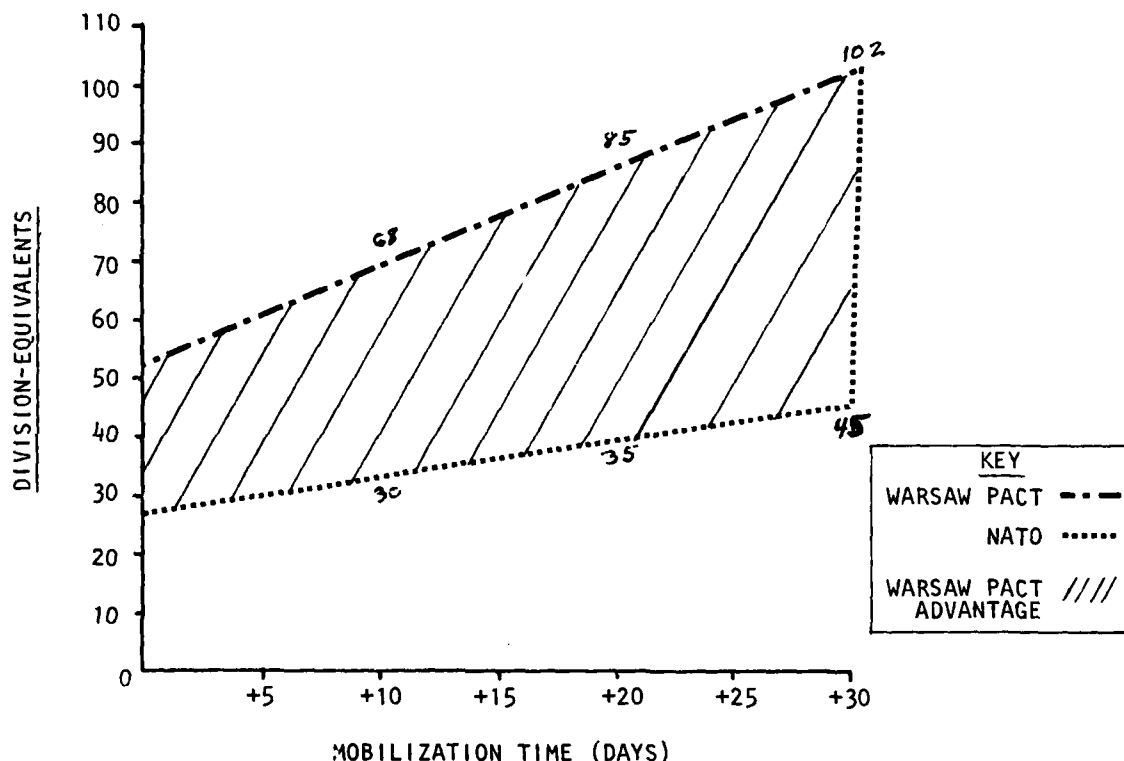


Figure 1. NATO-Warsaw Pact ground forces' strengths, M-day—M+30.

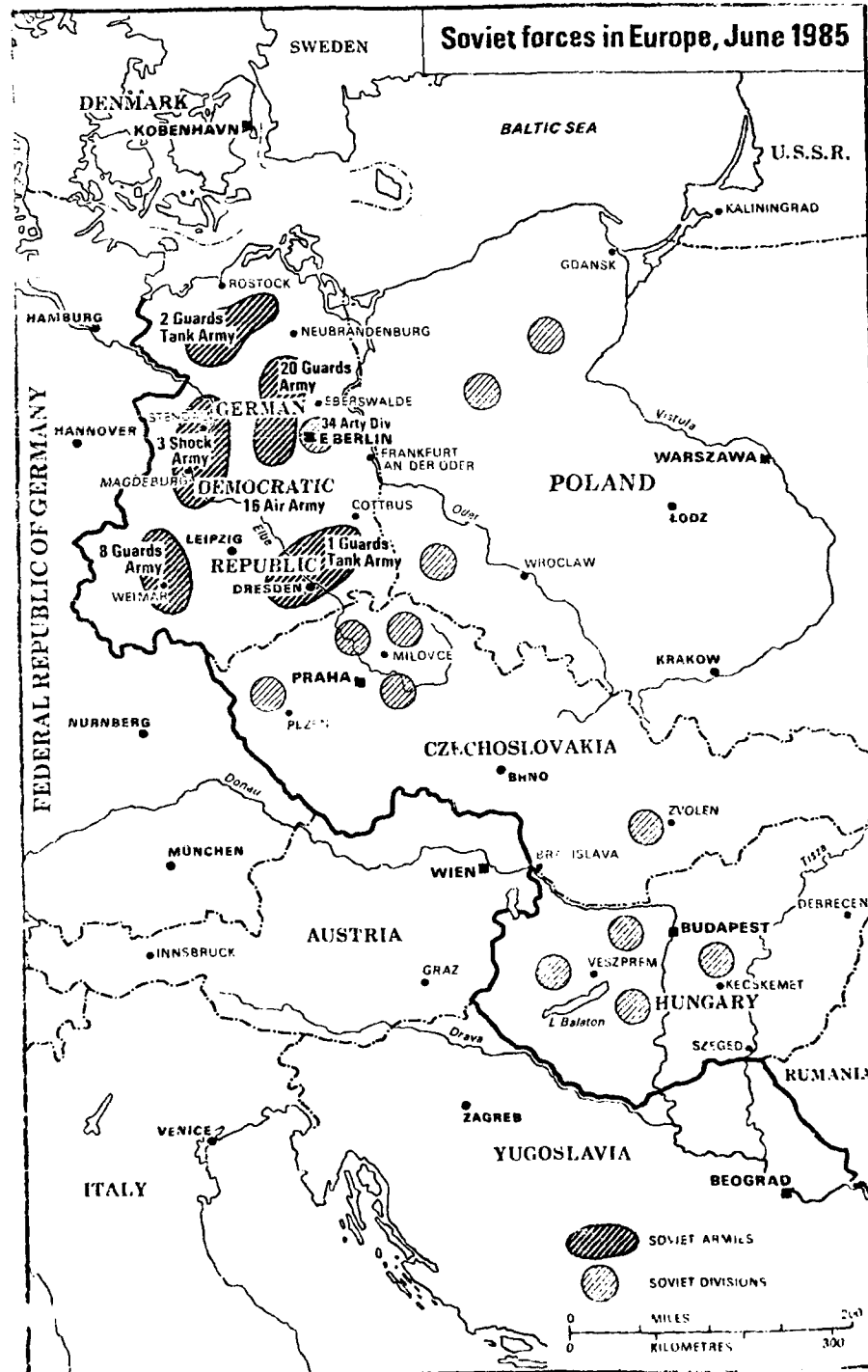
ASSUMPTIONS: (1) ON M-DAY, THE WARSAW PACT HAS 52 READY DIVISIONS (31 SOVIET, 6 EAST GERMAN, 9 POLISH, AND 6 CZECH); NATO HAS APPROXIMATELY 28 1/3; (2) BETWEEN M AND M+30, THE S.U. CAN BRING TO COMBAT-READINESS AND DEPLOY FORWARD 50 OF THE 67 DIVISIONS IN THE U.S.S.R. WEST OF THE URALS; (3) THESE DIVISIONS ARE COMBAT-AVAILABLE AT A UNIFORM RATE; (4) ALL OF NATO'S ACTIVE ARMY RESERVES ARE COMBAT-AVAILABLE IN PLACE BY M+30--ARRIVING AT A UNIFORM RATE.

COMMENTS: (1) THIS SIMPLIFIED PRESENTATION IS BIASED QUITE STRONGLY IN NATO'S FAVOR (I.E., ARRIVAL OF ALL NATO ACTIVE ARMY RESERVE FORMATIONS BY M+30. IT IS PROBABLY MORE REALISTIC TO EXPECT NATO TO ADD ONLY 2-5 DIVISIONS BY M+30); (2) 'DIVISION COUNTS' BETWEEN STATES ARE NO LONGER GROSSLY MISLEADING (FOR OUR PURPOSES HERE, A SOVIET DIVISION IS THE EQUIVALENT OF A NATO DIVISION); (3) THIS AUTHOR HAS LONG BEEN DISDAINFUL OF CRUDE 'BEAN COUNTING' EXERCISES, BUT THE SOVIETS WILL, BY M+30, NOT MERELY HAVE A NOMINAL 54 2/3 DIVISION SUPERIORITY ON THE CENTRAL FRONT, THEY MAY ALSO HAVE ADVANTAGES IN THE QUALITY OF MANY ITEMS OF EQUIPMENT AND, PERHAPS ABOVE ALL ELSE, BOTH IN THE APPROPRIATENESS AND FLEXIBILITY OF THEIR TACTICAL DOCTRINE, AND IN THE READINESS AND CAPABILITY OF THEIR STRATEGIC FORCES AND DOMESTIC CIVIL DEFENSE PROGRAMS TO ENSURE 'ESCALATION DOMINANCE.' THE SLOPES OF THE GRAPHS ARE, OF COURSE, INTENDED SOLELY TO BE ILLUSTRATIVE OF A PREDICTABLE TREND--SUCH REGULARITY WOULD NOT BE APPROXIMATED IN THE EVENT.

APPENDIX 4

CURRENT SOVIET DISPOSITIONS

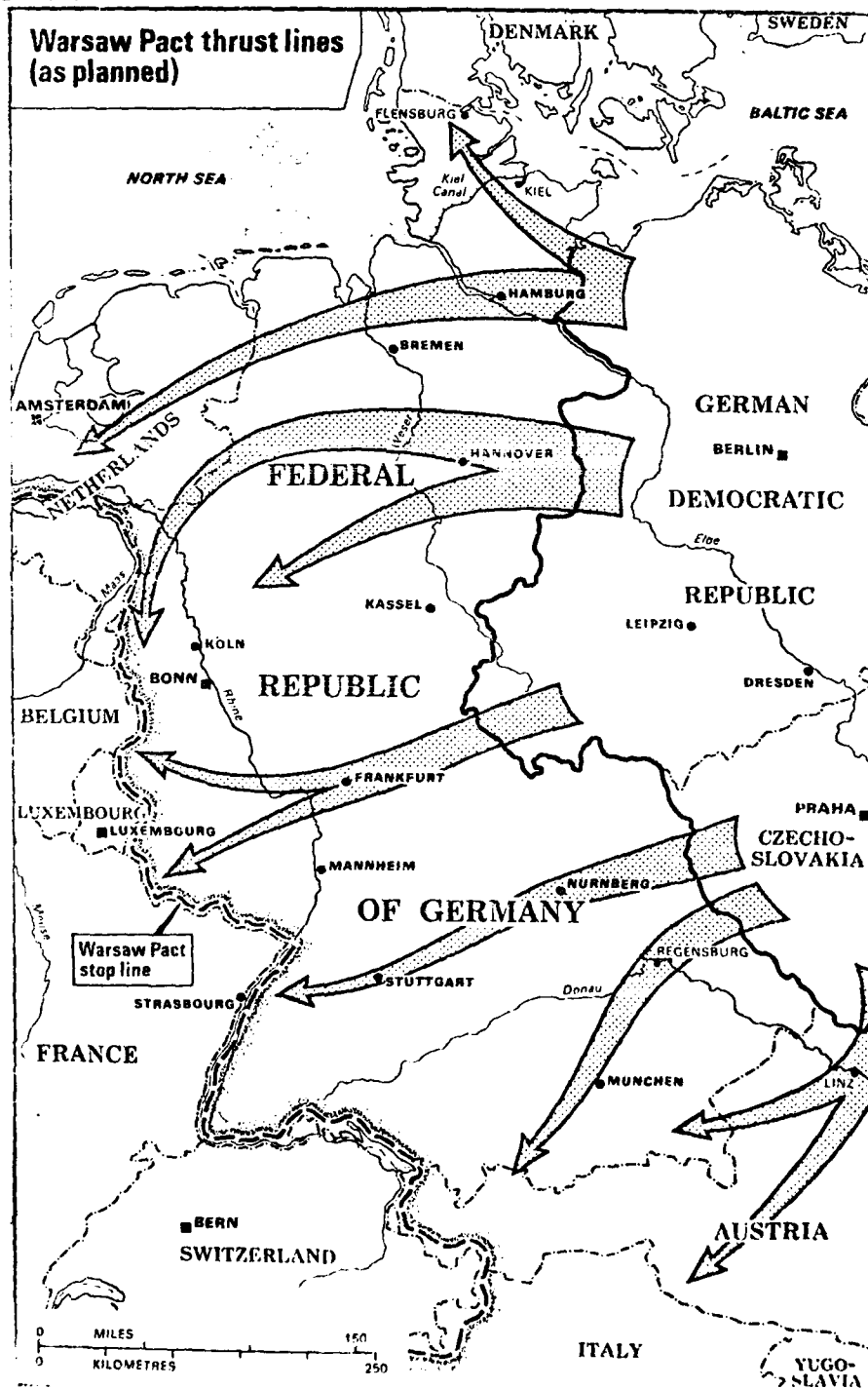
This depiction was taken from General Sir John Hackett's book, The Third World War, MacMillan Publishing Co., New York, 1978, p. 60.



APPENDIX 5

WARSAW PACT ATTACK LINES

This depiction was taken from General Sir John Hackett's book,
The Third World War, MacMillan Publishing Co., New York, 1978, p. 151.

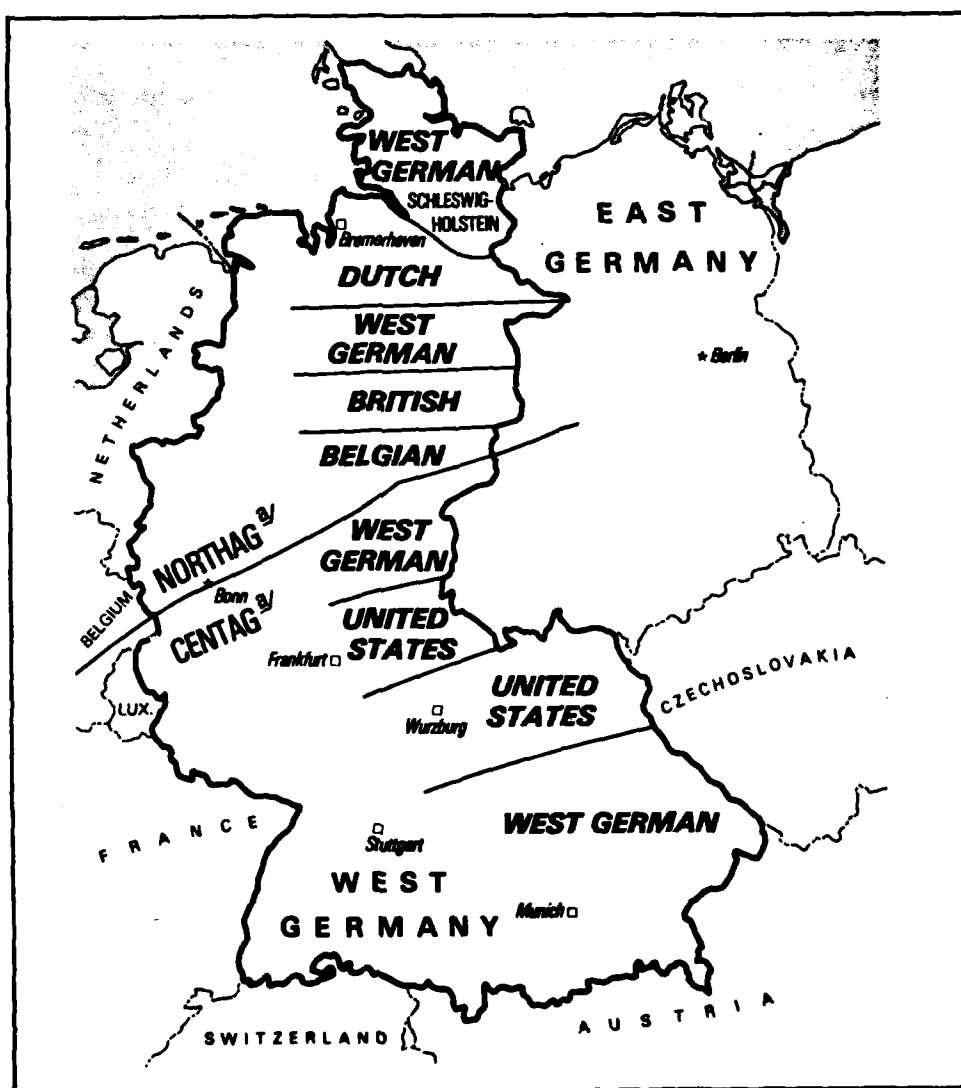


APPENDIX 6

NATO CORPS SECTORS

This diagram was taken from source listed at bottom of page and used in a Congressional Budget Office report, "US Air and Ground Conventional Forces for NATO: Overview," January 1978, p. 10.

Corps Sectors of Military Responsibility in NATO's Central Region



SOURCE: Adapted from Richard Lawrence and Jeffrey Record, *U.S. Force Structure in NATO* (Washington, D.C.: The Brookings Institution, 1974), p. 31 and also from U.S. Army materials.

g/ NORTHAG (Northern Army Group) and CENTAG (Central Army Group) are the two subdivisions of NATO forces in West Germany. The line dividing the two runs from Belgium through West Germany, just south of Bonn, and into East Germany.

APPENDIX 7

CONTRASTING VIEWS ON NATO DEFENSE

Sir General John Hackett - The Third World War.

The cause of the war will be inadvertent but the main attack will be in the North German plain in an attempt to flank and isolate the Central Army Group. The objective will be to occupy the FRG and liquidate it. The Soviets will parley with the Americans and isolate France. The attack will be conventional at first but will use some limited nuclear exchanges. The air defense coverage of Britain is important for the landing of American and Canadian reinforcements. NORTHAG's weakness in defense in depth and more maneuver forces must be corrected. Reserves must be prepared for war. France must be prepared to quickly join NATO and NATO must make conventional readiness improvements rapidly.

General Robert Close - Europe Without Defense.

The Flexible Response strategy is invalid because a surprise attack and short war won't have time for evaluation. The Warsaw Pact can launch a surprise attack and it's in their best interests. Frankfurt can be seized in 9 hours. The Soviets will then appeal to UN to establish a demilitarized zone. The main attack will occur in the North German plain with five armies. The speed of the attack will easily outmaneuver NATO forces. There will be considerable 5th column activity in NATO's rear areas. NATO's forces will not be able to react fast enough to stop the attack and due to the co-mingling of forces be unable to use nuclear weapons.

General Pierre M. Gallois - Soviet Military Doctrine and European Defense.

The war will open with a nuclear surprise attack and a conventional follow-up of blitzkrieg nature. NATO's current war plans will be defeated and are an invitation to aggression. US forces are nuclear hostages and US strategy is one of gimmicks and gadgets. NATO is not prepared for nuclear war. All aircraft are located on 20 airstrips. Reinforcements are vulnerable at airfields and ports. Great disparity in artillery and nuclear weapons ranges favor Warsaw Pact. 7000 nuclear warheads are stored in 100 depots. Strengthening conventional forces is obsolete. TNF weapons must be located at sea and be mobile. All fixed installations must be buried. Everything on land must be mobile.

Colin Gray - Defending NATO Europe. Planning Defeat: NATO Strategy.
The US and Western Europe: Security Questions.

NATO needs a serious and creditable conventional defense capability. It needs a comprehensive employment plan, closely linked to conventional defense, on TNF. NATO HQ could take 6 weeks to become effective war time HQ. The defense has no depth and is weak in the rear areas. The linear, border hugging defense invites rupture. There is no recovery capability if these ruptures occur. Main problem is not surprise attack but rather is reaction time and readiness of NATO's forces. A dense and cohesive forward defense is needed that has reserves for counterattacks and reinforcements to backup the reserves. NATO needs to correct its serious readiness problems and upgrade its TNF forces.

Edward Luttwak - "The American Style of Warfare and the Military Balance," Survival.

NATO needs a strategy based on maneuver and firepower, not just firepower. Maneuver warfare is unfamiliar to NATO concepts and doctrine. Doctrine is attrition oriented. Should incorporate annihilation and indirect approach into doctrine. Airpower must be used to protect the ground forces. NATO must be able to force disruption to Warsaw Pact's plans and timetables.

Ori-Even-Too - "The NATO Conventional Defense: Back to Reality," Orbis.

NATO needs a flexible defense based on mobile defense with a counter-attack capability. Defenders must trade ground and losses for time to develop the counterattacks. NATO needs to have quality leadership. NATO needs a better prioritization of the defense efforts with more emphasis on improving conventional readiness. Presents counter-argument to effectiveness of new missile technology being the savior of the defense.

Palmer Osborn and William Bowen - "How to Defend Western Europe," Fortune.

NATO needs to adopt a new defensive plan based on the extensive use of PGMs and minefields. The enemy would be trapped by extensive minefields at the border and those forces that broke through would be attacked by PGM mounted on dune-buggies. The object would be to catch the enemy between two types of firepower - area and direct. This would be a "nutcracker" strategy. A new mix of weapons need to be bought and used by NATO. Tanks would be placed in reserve for counterattack purposes. Quick reaction reserves, afloat at sea, would be necessary.

Phillip Morrisen and Paul Walker - "A New Strategy for Military Spending,"
Scientific American.

NATO needs to make extensive use of PGMs and smart weapons. This would call for a very different force structure within NATO. US defense effort could be reduced by 40%. The TRIAD could be reduced by concentrating on the submarine. PGMs would be hidden and well protected in the defense and surprise the enemy when fired. Target acquisition would be highly specialized and undetectable. The enemy would not be able to bring effective firepower against the dispersed defense in depth.

William S. Lind - "Military Doctrine, Force Structure, and the Defense Decision-Making Process," Air University Review.

NATO needs a maneuver doctrine instead of its firepower doctrine. The force structure must fit the maneuver doctrine and it must have great mobility. The logistics systems is too cumbersome and not responsive enough. Too much "foot" Infantry in the structure. FM 100-5 doesn't present any doctrine on the mobility factor in warfare.

Robert Komer - Treating NATO's Self-Inflicting Wound.

NATO's conventional defense posture is poor. More anti-tank weapons are needed in depth. Extensive restructuring is needed to have less support forces, no airborne forces, smaller and leaner divisions, better reserves, more rapidly deployable reinforcements and an extensive use of mines, barriers, and anti-tank forces at the border.

Steve Canby - NATO Military Policy: The Constraints Imposed by Inappropriate Military Structure. NATO Military Policy: Obtaining Conventional Comparability with the Warsaw Pact.

NATO's defense is cordon-like with no reserves or depth to the defense. TACAIR is designed for offensive warfare primarily. NATO needs stronger conventional forces and better linkage to TNF and strategic nuclear weapons. NATO must adopt a maneuver approach to war with strongpoints of defense well forward and tanks held in reserve for counterattacks. The new PGM technology must be adopted into the doctrine. Less support structure is needed.

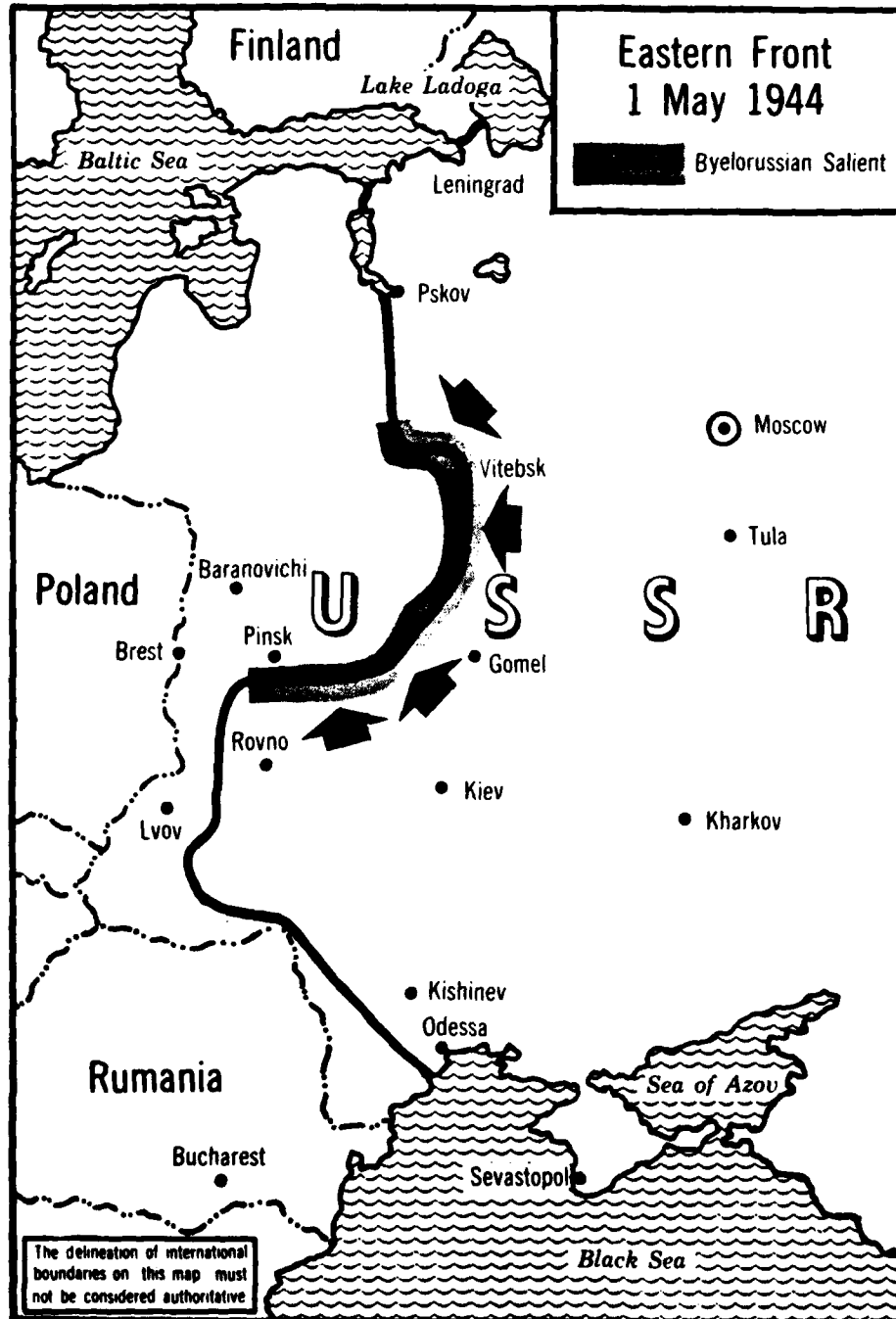
LTC Norbert Hanning - FRG (Ret.) - "Can Western Europe be Defended by Conventional Means," International Defense Review.

NATO needs to make extensive use of territorial forces in the forward defense. The border can be quickly manned by territorial forces armed with anti-tank weapons and using mines and barriers. These forces would hold the border until the regulars could arrive. An evacuation of civilians plan is needed for the border region and back for at least 40 kms. ATGMs need a new firing platform which is mobile but has an extension-type firing platform that can fire over mounds. AT weapons would be stored near border for quick issuance.

APPENDIX 8

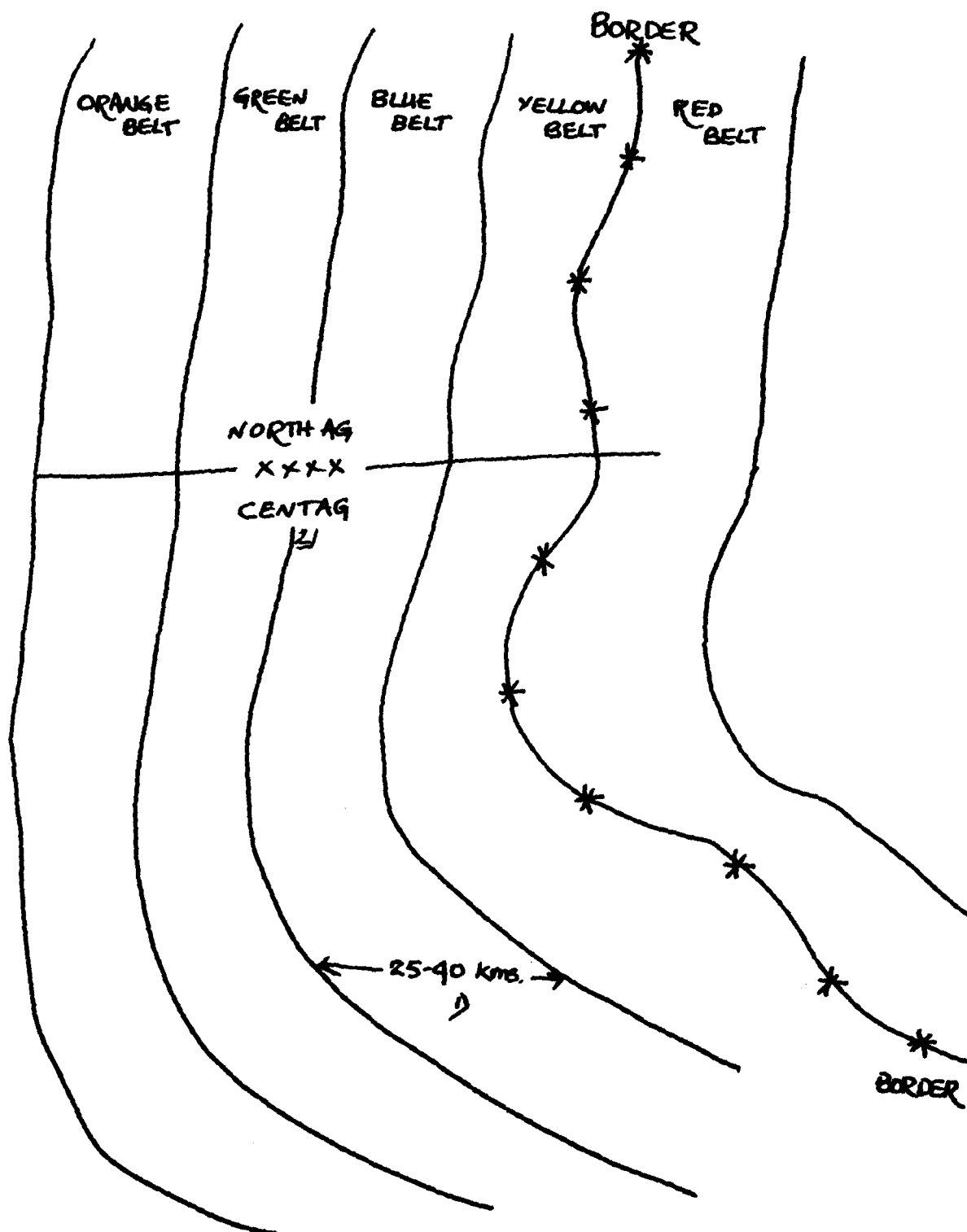
THE BATTLE OF BYELORUSSIA (OPERATION BAGRATION)

This diagram was taken from an article by Major Barney F. Slayton, "War in the Ether," *Military Review*, Vol. LX, January 1980, p. 63.



Source: Lieutenant Colonel Charles G. FitzGerald, *Operation Bagration*, *Military Review*, May 1964, p. 61.

APPENDIX 9. THE RAINBOW BELT CONCEPT



- 1/ These belts can be overlapping depending on terrain and enemy situation and success of NATO's defenders.
- 2/ Corps boundaries would coincide with main enemy attack routes.

LTG John McGiffert
Director of Army Staff
Office of Chief of Staff
Pentagon, Washington, DC 20310

LTC Victor Letenoff
Deputy Chief of Staff for Doctrine
TRADOC
ATTN: ATDO-C
Ft Monroe, VA 23651

LTG Glenn Otis
Deputy Chief of Staff, Operations
Department of Army Staff
Pentagon, Washington, DC 20310

Commander, TAC
ATTN: ATZL-CAD-LM
LTC LARRY WELSH
Ft Leavenworth, KS 66027

LTG Julius Becton
Commanding General
VII Corps
USAREUR
APO New York 09107

Commander, DTAC
ATTN: ATZL-SWT-C
LTC E. V. PARKER
Ft Leavenworth, KS 66027

COL Jack Griffith
Director of Programs, Analysis
and Evaluation
Office of the Chief of Staff
Manpower and Forces Team
Pentagon, Washington, DC 20310

Dr. Colin Gray
Hudson Institute
Quaker Ridge Road
Croton-on-Hudson, NY 10520

LTG DeWitt C. Smith, Jr. (USA Retired)
235 S. Hanover Street
Carlisle, PA 17013

Professor Michael Howard
All Souls College
Oxford OX1 4AL, England
United Kingdom

BG John Kirk
Assistant Division Commander
5th Infantry Division (Mech)
Ft Polk, LA 71459

LTC(P) Bill Wilson
Director, Department of Tactics
and Doctrine
US Army Armor Center
Ft Knox, KY 40121

COL Jerry Scott
Director, Command and
Tactics Department
USAIS
Ft Benning, GA 31905

COL Clyde Tate
Director, Department of Tactics
Command and General Staff College
Ft Leavenworth, KS 66027

Dr. Steven L. Canby
10871 Spring Knoll Drive
Potomac, MD 20854